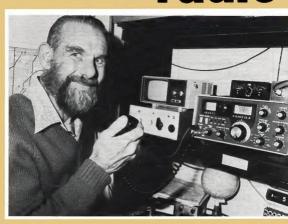
# JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

# amateur radio



VOL. 46, No. 7

18

**JULY 1978** 

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COVER PHOTO

COVER PHOTO

Rey Hartkopf VKJAOM shows us part of his
shack. Rey is editor of the YRS publication

"Zero Best" and a current VK4 Division
Counceillor.

See Rey's article "An 80 Channot Syn-

Photo by Reg Goudge.



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# amateur radio

WICZELIA



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# QSP - RADIO ACTIVITY DOWN UNDER

At one time, the Antipodes was the end of the earth - a place where only the unwanted were sent as for the west - well, did it exist? and if it did, it was likely that not much happened there anyway!

Some would argue that a similar situation exists even today. As far as amateur radio is concerned they are wrong, for things are happening in the Antipodes and the rest of the amateur world is "reading the mail". The last few years have seen a notable increase in activity in our higher amateur bands, in some cases

culminating in a number of world records being smasked.

Out west, on 25th January. 1977, VK6WG and VK5QR exchanged signal reports on 1296 MHz to establish a new world record over a distance of 1855 km. Not resting on their issrets, the same team then proceeded to establish, about 12 months later, yet another world record, this (lime on 2205 MHz on

Australia is also claiming a world record for the 432 MHz band. The contact between VK6XY and VK3ZQV on 22nd Fabruary, 1978, being over a 2563 km path.

The 432 MHz EME contact between VKZAMW and G3LTF on 30th February, 1974, is also claimed as a world 70 cm EME record. More recently VKSGB worked JHSTEW on 144 MHz, contact for which the JARL is rewarding VKSGB

with a suitable memento of this Brst VK-JA 2m QSO. News has also reached us (although unconfirmed at this stage) that a substantial distance (over 160 km) has been achieved in VK4 on 10,000 MHz.

Amateur radio is certainly alive and well down under. Activity is generally at an all time high in most of our share of the Spectrum from the Novice Segments of 30m to ATV and SSB on 23 cm.

Peter Wolfenden VK3ZPA/NIB, WIA Federal Vice-President. (Before a contact can be listed as an Australian (or world) record, a claim must be made in writing to the Federal Office of the WIA. All claims are processed by the VMF Advisory Committee In conjunction with an independent inviolistor -Fd 1

#### QSP IOTA

In his report on 20th JOTA in October 1977 the Association National Organiser, VK4ZNI, writes: "As has been the case over the past 20 years, the amateur radio operators have been magnificant in their generosity in making available their time and their equipment to help Scouts and Guides snjoy the full pleasure and excitement of this annual international Scouting activity. I sometimes wonder if many Groups realize how deeply indebted we are to the members of this fine organization for thier splendid efforts. Becoming more popular are the Area and District participants wonderful assistance of local amateur radio clubs who regard it as a challenge to set up a fully operational amateur radio station in the portable mode and do it to perfection, it is pleasing to see that so many members of these clubs remain to enjoy the week-end camping with the Districts they assist

WPX 10 METRE RECORD BROKEN

In the recent WPX world-wide contest, Steve VK3OT broke the standing world record on ten metres for a single operator single band station, set by a KH6 in 1970. He was 1.02 million at 230 prefixes and Steve's score in February was 1.5 million at 296 prefixes for the 30 hours. He had 1750 OSOs. **GOLD COAST HAMFEST 1978** 

Will take place at Mudgeeraba, four miles inland from Surfers Paradise, from 11.00 to 23.00h on 29th July. Check on Gold Coast Receater Ch. 42 for directions. RECORDS

"On Saturday, March 4th, George Luxon VKSRX accompanied by his charming wife were guests of honour at a small dinner attended by Divisional Councillors and wives. George has been QSI, manager of the Division for 47 years." — April 1978 SAWA Journal

#### CALL SIGN PREFIXES

According to May 1978 Radio Communication the ITU has provisionally allocated J4A-J4Z to Greece and J5A-J5Z to the Republic of Guines-Bissay. SPECIAL EVENT STATION

For those who like collecting cards from special events station operations by GBSTCF on 28th-27th August, 1976, on HF bands as wall as SSTV and RTTY (by request). It will also be on Monday, 28th August, for a shori period. The station will be operated from the National Town and Country Festival in the Royal Showground at Stoneleigh near Coventry, QSL Manager G4GJL, 58 Witherford Croft, Solibull, Wares, UK DX RECORDS - RHF

Ham Radio April 1978 reports KP4EOR worked LUSDAN on 2 metres for a distance record of 6300 km (3940 miles). YV5ZZ has heard LU3AAT on MHz but no contect resulted. The distance in this case would be about 5000 km. The date would be about mid-February.

PREFIXES - USA PACIFIC AREA Ham Redio April 1978 reports KH1 to KH0 are the places which are not FCC administered, such as KC6 and KX6, there might not be any changes. KP1 to KP0 will identify Caribbean areas.

"Amateurs are advised that the importation certain VHF transceivers previously prohibited be-cause of an equivalent set being made in New Casis of an equivalent set being made in New Zealand no longer applies. The importation of all types of amateur equipment is now available to all licensed amateur operators." — Broak-in, March 1978

GRAPEVINE Heard P. and T. in VK3 have to fix their morse machine so they can send proper morse in the exam. Are their faces rad?

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2m SSB and 2m Ch. 2 repealer: 00.302.

QLD.:
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Secretary — Mr. W. L. Glells VK4ABG
Broadcasts— 1825, 3580, 7146, 14342 kHz: 98.00

BA:
President — Mr. C. J. Hurst VKSHI
Scorelary — Mr. C. M. Pearson VKSPE
Broadcaste — 1820, 3550, 7086, 14175
Broadcaste — 1820, 3550, 7086, 14175
Broadcaste — 63,70 MHz, 2m (Ch. 8): 08,30

WA:
President — Mr. L. A. Ball VKGAN
Secretary — Mr. P. Savage VKSNCP
Broadcasts — 3500, 7080, 14100, 14175 kHz, 52.656
and 2m (Ch. 2): 01.302.

TAE.:
President — Mr. I. Nicholis VK722
Secretary — Mr. M. Hennessy VK7MC

Secretary — Mr. M. Hennessy VK/MIG Broadcasts— 3570, 7130 kHz: 09.30 EST. MT: Secretary — Mr. Henry Anderson VK/MA

Broadcasts— Belay of VKSWI on 3.55 MHz end on 146.5 MHz at 23002. Slow morse transmission by VKSWA on 3.55 MHz at 1000Z almost every day.

Postal information: VK1 — P.O. Box 46, Camberra, 2608. VK2 — 14 Atchison St., Crows Nest, 20

VIC — 14. Atchisor St., Cerons Most, 2085 (Pb. [02] 43 5795 Toss & Thurs (10.90-14.00b), VIC3 — 412 Brunswick St., Fitzrey, 3005 (Ph. (03) 41 3535 Sat 10.00-12.00b), VIC4 — 0.P.O. Box 638 Brishame, 4001.

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VK7 — P.O. Box 1010, Launceston, 7250.
VKB — (Incl. with VK5), Derwie AR Club, P.O. Box 37317, Winnellie, N.T., 5789.
Slow morse transmissions — most week-day even-loss about 09 302 newards around 3559 kHz.

ings about 99.30Z onwards around 3550 kHz. VK QSL BUREAUX The following is the official list of VK QSL. Bureaux, all are inwards and outwards unless

otherwise stated.

VK1 — QSL Officer, G.P.O. Box 1173, Canberra,
A.C.Y. 2801.

VK2 — QSI. Burezo, C/- Hunter Branch, P.O. Teralba, N.S.W. 2284. VK3 — Inwards QSI. Buresu, Mr. E. Trebilcock, 340 Gillies Street, Thombury, Vic. 3671.

VKS — Outwards CSL Sureau, Mr. R. R. Prowse, 83 Brewer Road, Benfleigh, Vic. 3204.
VK4 — OSL Officer, G.P.O. Box 636, Brisbane, Old., 4001.

VKS — QSL Bureau, Mr. Geo. Luxon VKSRX, 27 Befair Road, Torrena Park, S.A. 5062. VKS — QSL Bureau, Mr. J. Rumble VKSRU, G.P.O. Box F319, Perth, W.A. 5001.

Box F319, Perth, W.A. 6001. VM7 — QSL Bureau, G.P.O. Box 371D, Hobert, Tae. 7001.

VKS — QSL Bureau, C/- VKSHA, P.O. Box 37317, Winnellie, N.T., 5789. VKS, 0 — Faderal QSL Bureau, 23 Landale Street,

erd 2m (Ch. 2): 01.302. Box Hill, Vic. 3128.

QSP
A SAGA OF ACHIEVEMENT
The book "A Saga of Achievement" written by
Bon Hall telle the RAAF Radio story and was
released on 2nd April, 1978.

released on 2nd April, 1978.
Pictured at the book's Isunching are, I, to r. standing, Bon Hall (author), Vaughan Marshall, W. T. (BIII) Taylor, Bob Cunningham, Fred Bibby-Seated, I. to r., Clem Biakeley, Arthur Tinkler.



TVI, BCI — TBI?
Resident of one of Tasmania's smaller cities complained to the appropriate authority that his telephone service was suffering severe interference conversations inward and outward had to be conducted against a constant background of music. A technician sent to the premises confirmed that the complaint was genuine.

Knowing that 27 Met operations assistance cause various gives of insidence, the schooling that evidence process of the control of the for any indication of a "horselecating station", to the bad part open of antennos could be seen to the bad part open of antennos could be seen to the bad part open of the country of the horselecation of the country of the horselecation of the country of the horselecation of the country of white the terms of his flower. The foother explainment of the country of the created and were providing and movement programme to the country of the terms of o

The "broadcasting serials" were a triband bear and on 80 metre dipole.

— From Dick Goslin VKSSV.

STATISTICS
According to P. and T. Department returns at 21st March, 1978, the Ansateur Readio stations in Australia and Territories (23) Isolated 8892, of which SSAS were half calls, 2813 Italiade 8892, of which SSAS were half calls, 2813 Italiade 8892 and 1978 in New South Wales (3118), Isolated 8994 (2550), Desensiand (1903), South Australia (882) plus 85 NT), Western Australia (898) and ACT (1912) in the same return that number of CRI Excesses was below as 1972/95.

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## WIANEWS

During May one meeting of the Executive was held and one meeting of the Joint Departmental/WIA Committee.

The artwork for six coloured display posters, each about 600 x 500 cm. has been completed. The biggest problem now is to have 20 or 30 copies of each produced at a reasonable price. This is too small a run for litho and not an economical run for professional screen-printing. Mrs. J. Scott was the artist. Any ideas for producing these posters, perhaps as a school project. would be very welcome.

#### FEDERAL APPOINTMENTS

The meeting of the Executive, being the first following the Federal Convention, appointed various Federal officers subject to Divisional and individual approvals, Many were unchanged from last year. These were Michael Owen VK3KI as IARU R3 Liaison Officer, All Chandler VK3LC as Fed, Intruder Watch Co-ordinator, Ken Seddon VK3ACS as Chairman, Fed. Receater Sub-Committee. Max Hull VK3ZS as Fed. Historian, Ray Jones VK3RJ as Fed. OSL Manager. Brian Austin VK5CA as Federal Awards Manager, Charles Walker VK2BXX as Chairman Fed. RTTY Committee, but since resigned owing to other pressing commitments. and Pater Wolfenden VK32PA as Executive Vice-Chairman and also Chairman VHFAC. Keith Roget VK3YQ was appointed as Fed. Hon. Treasurer but has since had to resign on transfer overseas for an extended period.

New appointments were Bob Arnold VK3ZBB for Satellites. Wally Walkins VK22NW as Fed. Contest Manager, and Ron Henderson VK1RH as Fed. WICEN Co-ordinator. Once again no name came forward for Fed. EMC Co-ordinator.

#### ARRL HANDBOOKS

The special price 1977 ARRL Handbooks had sold very

rapidly and the Executive were most fortunate in being able to secure a further supply which should arrive about September. NOVICE BROCHURE

The Novice No. 1 brochure was duplicated and copies are now available. The price is 65 cents each, post paid. The brochure contains a copy of the official Novice svilabus, the WIA officially endorsed study guide and notes on Novice operating conditions. Work on the production of a bank of typical Novice questions is continuing. CUSTOMS

Work also continues on Customs matters relating to HF beams and 70cm transcalvere HOVICE

A number of Novice licensing questions were discussed with the Department in the Joint Committee, A letter went to the Department requesting 3625 kHz as the top segment limit for Novise on 80m. The vexed question of Novice examinations in cantres distant from capital cities was discussed at length and it appears that this is a problem recognised by the Department and a Press Release on the subject was promised.

The Department categorically stated that RTTY and SSTV modes were not authorised for Novice licensees and were never contemplated. In fact the removal of FM as a mode was not being done. The inclusion of these modes would have necessitated examination questions on them. The WIA also raised the question of the inspection of Novice equipment at Departmental centres. It appears that the promises of reduced licence fees for pensioners is still under examination in relation to the definition of a pensioner. Morse speeds were again discussed and it appears that the Novice morse in future will be done by hand keying which hopefully will resolve the slow ITV standard mores. machine-generated. On the question of speed endorsements, the Department regretted inability to cope with this because of the staff situation. The question of reciprocal licensing is to be updated, vide the letter in AR for August 1972.

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3.65 SKY 40M 7.06 SKY, 20 14,150 SKY, 15 21,100 and up. SKY. 10 28.5 and up. PRICE LIST: SKY 80 6 feet long 3.5 MHz \$28 SKY 40 6 feet long 7,060 \$26 SKY 20 6 feet long 14,150 \$26 SKY 15 6 feet long 21.100 \$25 SKY 10 6 feet long 28,500 \$24 Swivel mounts and chrome

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# **80 CHANNEL SYNTHESISER**

Roy Hartkopf VK3AOH 34 Toolangi Rd., Alphington 3078

This article follows on from one published in AR (March 1976) which outlined the development work being done on an 80 channel synthesiser for the 2 metre band.

The serilor article appealed for someone interested to help with the development. There were no offers although several people wrote expressing interest in the finished product. Due to lack of time the project was put saide. However, recently assistance came from Neville VKSBDW who is working on the multipliers and final. Meantime the synthesizer has been completed. As It stands it gives 60 channels completely in the stands it gives 60 channels apart. This is neterodyned and the result multiplied by its giving 60 channels spaced.

50 kHz apart through the two metre band. The output of the synthesiser is controlled by two thumbwheel switches and the numbers on these indicates the WIA band plan channels on two metres. So if you want channel 42 for instance, you just set the

thumbwheel switches to 42 and you are in business. This should be ideal for mobile work. The synthesiser has been tested on air with a mock-up exciter giving about 50 mW on two metres and there is no sign of noise or instability from the VCO.

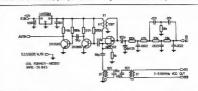


FIGURE 2: VCO Circuit.

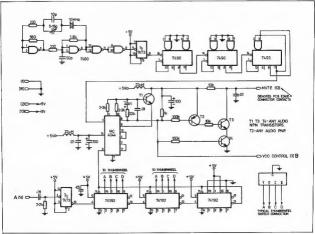


FIGURE 1: Phase Lock Loop Circuit.



VCO Board Component Layout.

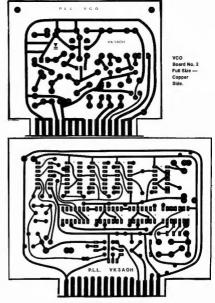


#### BLOCK DIAGRAM

Fig. 1 is the block diagram of the PLL (phase-locked loop) system. The reference frequency is generated by a 10 MHz crystal and a 7400 is used as the oscillator. This is divided by two, ten, and twelve, coming out at 4,1666 kHz. This is fed into a MC4044 comparator. The comparator supplies a control voltage through a filter to a BA125 varicap which controls the frequency of the MPF102 VCO (voltage-controlled oscillator). Part of the VCO output is picked off and fed to a double tuned circuit which gives a broadbanded output to the heterodyne and multiplier sections which Neville VK3BDW is at present developing. The VCO frequency is also amplified through two 2N3565 transistors so that it becomes suitable for driving half of a 7473 on the PLL board. The frequency is divided by two and then divided as desired by two programmable dividers controlled by the thumbwheel switches. The total division in the 74190 divider may be between 600 and 699. The final output of this division must be the same as the reference frequency, namely 4.1666 kHz. If it is not then the comparator changes the voltage on the varicap until the VCO frequency is such that the output does come to 4.1666 kHz after going through the divider chain. The mute line is used to disable the transmitter during the start period when the loop is unlocked as occurs when changing frequency.

#### POWER SUPPLIES

The main logic on the PLL board is supplied in the usual way from a 5 volt regulated supply (a LM309K is quite suitable) but the VCO board requires a separate



PLL Board, Full Size - Copper Side.

regulated supply. LM309H was used, mounted on the board. Even though the main supply is regulated it is not good enough to use this for the VCO since the slightest variation in the supply voltage here causes noise and instability in the

VCO output.

Figures 2 and 3 give the layout of the main components on the PLL and VCO boards respectively and Figs. 4 and 5 show the copper side. The crystal used is the small size IK type), not the D type and the circuit in which it is to be used should be given to the manufacture to make sure the crystal can be brought to exactly 10 MHz as the whole accuracy and stability.

of the system depends on this crystal. FURTHER DEVELOPMENT

The remainder of the two metre transceiver is being developed along the lines described in the article of March 1976 although it has not been found necessary to tune the multiplier. The transceiver will be for the FM band 146 to 148 MHz.

By altering the division ratio there is no reason why the same arrangement could not be used for other purposes. For instance if the reference frequency was divided down to 5 kHz the system could be used to give 10 kHz spacing through the HF hand and so on.



# CONVERSION OF HF TRANSCEIVERS TO THE SIX METRE BAND

Geoff Wilson VK3AMK 7 Norman Ave., Frankston 3199

During recent years there has been a very noticeable move away from the concept of homebrewing for the 6 Mx band. The reasons for this have been many, the change to SSB as the main mode has imposed greater stability requirements than previously and the cost at ada scarcity of suitable components have made commercial equipment more

attractive. Recardless of how well a home-made rig may perform it is impossible to produce anything that will have any resale value later on. Despite the variety of excellent commercial 6 Mx units available now most fail hadly in one important aspect, lack of realistic output in relation to their cost. With the exception of equipment such as the IC502 in most cases the cost is similar to that of a multiband HF transceiver and vet the power output is almost invariably In the 10 watt PEP range. For most purposes this level of output is inadequate for really serious DX work unless everything is going for you, and this includes your antenna, band conditions, local terrain and the general efficiency of the station at the other end. Probably the only commercial units to run reasonable power levels were the Heathkit SB-110A and the Swan 250 but the numbers of these units in VK could probably be counted on the fingers of both hands (and then have some to spare!).

At the present time there are many good secondmand Hr transceiver available which can be very easily converted to operate on 8 Mx with only minimal additional parts and these transceivers will then give a very good account of themselves on 6 Mx up to around the 100 watts PEP certain teach Probably the total outlay would not exceed half the cost of a current transceiver with a 10 watt PEPP number of the cost of a current of the cost of the cost of a current of the cost o

A careful look at the circuit of the average HF transceiver will show that the only difference between bands is in the

components and crystals used in the transmitter final mixer, driver and receiver RF amplifier and first mixer stages. All other sections use components common to all bands. By changing the above sections the transceiver can virtually be put on any frequency up to 60 MHz or so which is about the limit of reasonable efficiency with the final tubes. If the conversion is done carefully and a record kept of each change made there would be no reason why reconversion couldn't be done later if the need should arise. Figure 1 shows the essential parts of a normal HF transceiver and Figure 2 shows the additional sections required to give 6 Mx operation. As each type of transceiver varies from others to some degree I won't cover the conversion In detail but rather in broad outline only. Anyone contemplating such a project will more than likely be already conversant with VHF techniques and likely pitfalls There is a wealth of information in the various handbooks to guide anyone as to circuit details, e.g. ARRL Handbook, etc.

Probably the first decision to be made will be which band or bands to use as the tunable IF? This band or bands to use as the tunable IF? This will depend on several factors. Firstly do you require a small range, say 500 kHz, or do you wish to cover the full 50 to 54 MHz? A 500 KHz range will probably mean one extra crystal while to cover 4 MHz will more lish as likely require eight crystals. Secondly, if say 28

MHz is to be used as the furnable If is the transcelver sensitivity sufficiently good enough? These questions will have to be enough? These questions will have to be additional oscillator frequencies will be used if will pay to do a check of the entire frequency chain to make sure there won't be some unwelcome beat in the middle of your favourite section of the band.

The most simple conversion proceeds as follows: Insert a 6 Mx receiving converter between the antenna relay and the existing receiver input, the receive section of the transceiver is now effectively a 6 Mx receiver, using one or more of the former HF bands as the tunable IF. The output of the final transmit mixer is th removed from the driver stage and an additional mixer stage is added. This stage mixes the tunable IF transmit frequency with the output from the 6 Mx receiving converter oscillator. Here it may be nacessary to add a buffer stage following the oscillator if the signal level is low, again this will vary from case to case. This mixer stage is tuned to 6 Mx and then fed to the former driver stage which also must now be tuned to 6 Mx. Existing components could probably be re-arranged to suit here. The final stage is then tuned to 6 Mx and the transmitter retuned for peak output at 6 Mx. It will of course be necessary to watch for any HF components

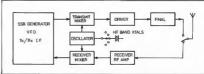


FIGURE 1: Typical HF Transceiver Block Diagram.

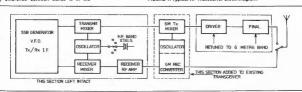


FIGURE 2: Block Diagram of Converted HF Transceiver.

which may affect VHF operation, but these should be few and easily spotted. Pay particular attention to items such as bypassing, chokes, lead inductance, etc., as these sometimes degrade even 10 Mx per-

formance. There would appear to be no reason at all why the new stages shouldn't be solid state when used in older valve type equipment and in fact the smaller size may make this essential. A typical trans-

ceiver suitable for conversion would be, say, an FT-200 which today would normally be available secondhand at reasonable prices.

# VERTICAL — HORIZONTAL ANTENNA ROTATOR

Maurie Batt VK3-L3062 R.S.D. Rokewood Junction 3351

2 meter repeators and activity on the tuneable end of the band, if was decided to make one efficient antenna serve both modes, thereby reducing the costs by half. The rotator described will do just that and at very little cost. The original rotator was constructed by the author and has been in use for some considerable time and during that time no problems have arisen.

With the ever growing popularity of

However the rotator described has a few desirable modifications added Constructors not having the necessary equipment avaliable can get the weiding and the bushes machined at a moderate cost. The rest of the work is guite simple.

The antenna used by the author is a KLM 144-148 MHz. The ements on a 1 inch boom All measurements quoted are for an antenna with a 1 inch diameter boom.

antenna with a 1 inch diameter boom.

PARTS LIST

10 length of aluminium tube — 1%" OD

not eas than 16 SWG.

3 length of a uminium tube 1%" OD 17

3 -- 14" gutter screws 1 long.

5 — 1/4" nuts.

2 plastic or rubber furniture leg caps 11/2" diameter

4" length of 1%" graphited impregnated hylon rod.
4' length of steel rod.

28" length of % " steel rod.

2 — 11 hylon stop nuts. 2 cable eyes.

1 special mast — boom clamp. TV antenna vertical mounting bracket or universal clamp.

clamp.
METHOD
Machine the rivion rod down to a good

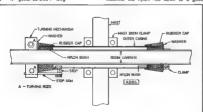


FIGURE 1: Section of Rotator.



Vertical position.

sight fir into the large table Bore out to the accommodate the a working clearance to accommodate the 1%" habe Gut in half to form two bushes 1%" long Press one into each end of the large tube Insert the 1% die table through the bushes. It should fix snugly in the bushes but be free enough to turn without any briding. High spots can be removed with a piece of abrasive coth on a dowel.

Remove the 1%" tube Take the large tube and measure 2' down from one end

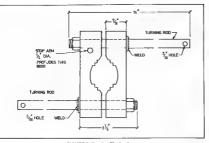


FIGURE 2: Turning Mechanism

and sor be a line around the circumferonce. On this line mark two stops 1%;" spart. Centre pop, and drill out to take a ¼" screw. Take two of the gutter screws and insert them through the holes from the inside of the tube. Secure each screw with a nut.

From an odd piece of thin fubling, about "i," dia, which will sip over the threaded portion of the screws, cut two lengths long enough to leave anough whead to long enough to leave anough whead to each of this screws and tighten down with a rut. At the point check that the 19s' d.s. tube will not fout on the screw heads, a rut. at the point check that the 19s' d.s. tube will not fout on the screw heads a rut. at the point fout the total scale. When tightening the rute clear. When tightening the rute may occur and cause high spot in the bushes. These can be removed as staled shove.

Now a hole has to be cut in each of the rubber caps to form a weather-proof seal. To cut a hole perfectly concentric to ensure a good weather-seal the best way is to take the 11/4 tube and file a chamler on the inside of one end of the tube to form a cutting edge. Place one of the caps on the end of the large tube and ensure that it fits tight up against the bush Insert the chamfered end of the tube through the bushes in the large tube and with the end of the rubber cap pressed up against something solid, exert pressure and with a turning motion of the smaller tube proceed to cut the hole. When completed, carry out the same procedure on the other cap Cut the chamfered end off the tupe and clean off any roughness.

From a scrap of aluminium sheet about 18 SWG fabricate two washers 1% "OD 8 With a 1%" obeassis punch would be ideal to cut the hole and the hole would only need to be filled out slightly to fit onto the tube.

Make up a clamp from the same material

about  $\frac{1}{2}$ " wide and 1" dia. Drill the lugs out to clear a  $\frac{1}{2}$ " screw. This completes the work on the barrel section.

Remove the U bolts from the TV antenna clamps as these are not required, leaving the vee blocks. At this stage it might be as well to mention that the TV clamps used by the author were 3" long on the sides and about %" deep and about 1%" across the two flats. Take the %" rod and cut into two equal halves and cut a %" whitworth thread 1" long on one end of each of the rods. Weld or braze a rod into each of the clamps, see detail in Fig. 2. The position of the hole for the stop arm will depend on the maximum diameter of the rubber cap and there could also be a variation in the measurements of the TV clamps made by different manufacturers. Also the placement of the stop arm will determine the range of rotation which should be 90 degrees, but whatever locate the stop arm to clear the circumference of the rubber cap. When marking the position of the hole for the stop arm in the TV clamp take note from Fig. 2. When the constructor has decided the position of the hole run a 1/4" drill through both flats of the clamp. The 1/4" rod is then welded or brazed in position It is essential that the rod protrudes from the top side of the TV clamp as shown in Fig. 2. Failure to do this will result in incorrect operation of the rotator.

Drill a ½" hole in each of the outer onds of the turning rock. A ring is filted in each of the holes to carry a cable eye. When the turning mechanism is completed, a plating shop will cadmium plate or galvanse it for a moderate cost. This will give it all weather protection, otherwise corrosion will soon set in where the metal his been burnt during the welfaing process.

Assemble as follows: Ensure that the inside of the large tube is free of filings and other foreign matter. Check the in-



Horizontal position.

side and outside of the other tube for high spots, especially the bearing surface Insert the tube into the larger one and if available smear a liberal coating of rubber lubricant over the outer ends of the bushes. Fit a rubber cap over each end of the tube. With the caps fitted movement of the tube will have stiffened up but should be free to rotate Locate the inner tube so that an equal length protrudes from each end of the large tube and on the end furthermost from the two stops on the barrel place one of the washers over the smart tube. The aluminium clamp is then fitted tight up against the washer and tightened. Place the other washer over the other end of the tube. The turning mechanism is then put on the tube with the stop arm between the two stops where they are nearest to each other. Do not over tighten the nuts on the turning assembly Details of final assembly can be seen in

When installing rotator on antenna, note the centre of gravity, remove elements to this point and slide the rotator along the boom to the centre of gravity. The antenna is secured to the rotator with a self-tapping screw in each end of the rotator tube. The rolator is turned by means of a length of nylon cord that will reach from the antenna when extended to the maximum height down to near ground leve: The nylon cord is taken around the cable eye. The best way to secure the cord on the cable eve is to slip a brass ferrule or a short length of brass tube over the cord, tie a knot in the short end, and pull the long end of the cord so that the ferrule is up tight to the cable eye, then crimp the ferrule in a vice. When the antenna is not being used in the vertical position turn it to the horizontal position. This will reduce strain in high winds on the rest of the antenna installation. Should any constructor experience any difficulty, contact the author.

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# SUGAR COATED OSCAR

Gil Spencer VK2JK/ex W1ZCH PO Box 300. Soit Junction 2088

I'm sure there's a plot. It's been contrived by a small band of technically-oriented hares who want to keep OSCAR for their own devious purposes and leave the rest of us stagnating in a pool of confusion.

how else would you explain the mystery that still cloaks OSCAR-7 (Orbiting Salellite Carrying Ameteur Radio - Version 7)? It's been up there for years now, fashfully spinning around the earth in a highly predictable fash on offering new horizons (literally) to amateurs. Yet we're still getting fed cumpersome information and confus-Ing and incorrect data that makes it all seem just too hard.

Well, here in Spit Junction, there's been a breakthrough! I've managed to cut through the nonsense. Without access to computers, az-el antennas, high-powered transmitters - as a matter of fact, with equipment not much different from yours, I'm working OSCAR-71

My activity has been confined to Mode A (2 metres up and 10 metres down) so this article will stick with that This removes a lot of the confusion. Mode B is 70cm up and 2m down and we'll forget Mode B. Here's my equipment line-up.

#### TRANSMIT!

CW on Kenwood TS-700A fed through 100 feet of RG-8/U to a % wavelength vertical ground plane, in round numbers, that's 3 dB of feed line atteruation, compensated by 3 dB of antenna gain. At most, my radiated power is 12 watts!

CW/SSB on Heathkit SB-102, a 6-year old obso ete ham band transceiver being fed RF by a 20-metre (sic) sloping dipole through 100 feet of RG-58/U

With this primitive lash-up, I can hear the OSCAR beacon at 29.5 MHz practically all the time it is above my horizon. Not only that, I've heard VK2ZI, VK8ZC, ZL1ANT and others. With practically no trouble I can monitor my own CW signal being transmitted by OSCAR By the time you read this article, I will have completed a QSO through OSCAR-7 Mode A. It's not hard Wart 'tr! you see how I do when I organise a 10-metre dipole!

#### OSCAR-7 FUNDAMENTALS

Visualise OSCAR orbiting the earth in a fixed polar orbit travelling over the same terrain time after time, its speed and altitude fixed by the earth's gravity. That's what would happen if the earth was not itself revolving on its own axis. OK so tar? The only thing wrong with that picture is that our earth of course, is revolving. Every QTH in Australia is continuously moving East. It's the earth's rotation, not OSCAR dancing around, that makes the satellite rise and set in different places. ORBIT NUMBER

Now, let's get "Orbit Number" sorted out. Visualise OSCAR when it's directly above the equator travelling north. That's the beginning of a new orbit and the end of the old one. The orbit number increases by one. For example, old orbit number was 15000: new orbit number is 15001. Orbit 15001 will last one (1) hour and 55 minutes (OK, purists, 1 hours 54 944676 minutes . . . see, that's the sort of thing they say to try and confuse us). In that hour and 55 minutes OSCAR will make a complete trip around the world and will again be over the equator travelling north. NOW GET THIS . . . if the earth had only held still, OSCAR would cross the equator in the same place that it began. Fortunately for those of us who like sunrises, sunsets, etc., the earth is going about its business of revolving on its own axis. In the time it takes for OSCAR to complete its independent orbit, the earth has revolved toward the east. This means that OSCAR crosses the equator further WEST now than last time. Don't give up now. Spend about 3-4 minutes thinking about it. Visualise yourself aboard OSCAR looking down. Then visualise yourself further in space looking down on both OSCAR and earth (both, of course, satellites in their own way). Don't read on until you're comfortable with the concept.

Now the mathematicians know exactly how many degrees (there are 360 of these needed to get around the equator) the earth will have revolved in 1 hour and 56 minutes. If you ask them they might tell you. They will quote 28.73817 degrees; we'll settle for 28.7 This is not all that obscure, really. Let's remember that the earth revolves 360 degrees in 1440 minutes (24 hours). If you work that out you il see there's a connection.

Don't get confused by the fact that OSCAR really crosses the equator twice each orbit, it's the northbound crossing that counts, it's also the apparent decrees west equator at movement that we need to remember

So Table 1 gives two vital constants:

#### TABLE 1 OSCAR CONSTANTS

115 minutes = 1H 55M - time per orbit 28.7 degrees per orbit.

Try and memorise these Table 1 constants. They're all you need Litimately to remember

Starting in 1978, Mode A is available 1 day in 3. The other 2 days are Mode B days. The obscurists tend to mutter about this in a confusing fashion. It's not that hard, really There can only be 3 types of months depending upon which date happens to have the first Mode A pass. They are:

MODE A DAYS

- "1" Month Mode A on 1, 4, 7, 10, 13, 16, 19, 22, 25, 28, 31
- "2" Month Mode A on 2, 5, 8, 11, 14. 17, 20, 23, 26, 29
- "3" Month Mode A on 3, 6, 9, 12, 15, 18, 21, 24, 27, 30
- In 1978 we have this Mode A line-up Jan 3. Feb 2. Mar 1. Apr 3. May 3. Jun 2. Jul 2, Aug 1, Sep 3, Oct 3, Nov 2 and Dec 2. (Watch AR for any changes-Ed)

## OSCAR-7 ORBITAL REFERENCE DATA There are a number of sources for OSCAR

orbital data to help you know when to expect to hear OSCAR at your QTH. The Wireless Institute's journal, AR, is one. A more comprehensive annual calendar is available from WSPAJ Send Skip \$5.00 (U.S.) and a self-addressed label for an air mail conv. of the 1978 model.

The method usus y adopted to publish orbital data is to give a daily reference orbit. The reference orbit generally selected is the first in each Greenwich day (this is the time the mode changes). The data given are, first the orbit number, then the date, followed by the time when the orbit begins, and fing v the point where OSCAR crosses the equator moving north. The time is UTC (UTC = GMT - Zulu . . it's all the same thing). The equatorial crossing is always given in degrees west of the Prime Meridian (Prime Meridian -O degrees - Greenwich meridian). The degrees can go as high as 359. This is actually an easier nomenc ature than the one used on maps. There's no need to

Here's a couple of things to think about. The time of the first Gresnivich pass will always be between 0000 and 0154 UTC. Spand 30 seconds reflecton right now and you'll understand why. The degrees west open of the couple of the spand o

worry about whether it's east or west.

## EVENING MODE A PASSES If you're like me, you have to restrict your-

self to the northbound passes because they happen in the eventing. There are at least three of them every Mode A evening (see Days of the Year, artier), wherevery yo, are. For those of you who are home during the day, there are also 3-4 southbound passes you can hear, but this article does not address littled to them.

Before we go into how to figure out when OSCAR is hearable from your QTH, we need to have a bit more background

A FEW MORE OSCAR-7 FUNDAMENTALS
The data given in Table 2 refers to metropolitan Sydney. The principles remain the
same for anywhere in Australia but the
figures need adjustment

In Austra-is, as we laten to northhouse OSCAR passes, we are concerned with the final mirutes of the orbit Alter all, OSCAR as not less years of the equation of the orbit Alter all, orbits and orbits are all orbits and orbits are all orbits and orbits are all orbits and orbits are orbits are orbits and orbits are orbits and orbits are orbits and orbits are orbits are orbits and orbits are orbits and orbits are orbits and orbits are orbits and orbits are orbits are orbits and orbits are orbits are orbits and orbits are orbits and orbits are orbits and orbits are orbits are orbits are orbits are orbits and orbits are orbi

#### TABLE 2

#### ORBIT USEFULNESS IN SYDNEY (Based on 350 ft ASL as 33 50 00 S and 151 14 00 E)

Orbi	it Degree	es W	est Xing		No. of Degrees	Remarks
0	through	48	degrees	inclus.	49	OK for Southbound passes only
			degrees			Never heard in Sydney
147	through	245	degrees	inclus.	99	OK for Northbound passes only
246	through	308	degrees	inclus.	63	Never heard in Sydney
			degrees			OK for Southbound passes only
					_	

If you want to adjust this table for your location, find your OTH on a map and determine your longitude East of Groenwich. Subtract your longitude from 151 (Sydery), Add the difference to the degrees given in the table. For example, the press about 114 degrees east of Greenwich. 151 isses 114 = 37 Adding 37 to the degrees given in the table let us that useful northbound OSCAR passes to the property of the control of the property of the proper

the equator. Listeners further north, In Brisbane or Darwin, for example, will hear OSCAR after it passes into the northern hemisphere, but not we Sydneysiders.

There's nobody close to see level anywhere in the world who will hear OSCAR for more than 22 minutes during a hearable peas. If you're up in the mountains somewhere you might squeeze an extra minute out because your physical horizons are less restricted.

OK, then if the maximum window is 22 minutes and it's the final 22 minutes of an orbit, the thing to do is work backwards from the reference data rather than for-

5th and 6th orbits of each Greenwich day. They will be those orbits with a degrees west crossing between 147 and 245 degrees. On the odd occasions when there are four passes, they'll be the 3rd, 4th, 5th and 6th passes.

Once you have the reference data for the first Greenwich crossing of the day (from AR, perhaps), all you need are the factors for orbits ~3, ~4, ~5 and ~6 and a place of scratch paper. Table 3 shows these factors; you'll have to supply the scratch paper.

These table 3 factors are simply an extension of the OSCAR constants given

#### TABLE 3

PACTORS USED	TO ADJUST FIRST GREENWICH	PREFERENCE ORBIT
Add to Orbit	Add to UTC Time	Add to Degrees West Crossing
+3	5H 45M	86.2
+4	7H 40M	114.9
+5	9H 35M	143.7
+6	11H 30M	172.4

wards. We should listen during the last half hour of life of perticular orbits. In other words, let's ligure out certain beginnings, subtract a half hour and listen to the end of the previous orbit. I find its a easier than working forwards. Maybe you'll agree.

#### HOW TO WORK IT OUT

After you get rid of the degree decimal points there are only 360 places where OSCAR can cross the equator. Only about 200 do you any good; the other 160 are useful.

for north-moving passes. See Table 2. You don't really have to understand Table 2 to work out the passes that you will hear each evening. It's there to show that there is some logic to it all, and to assist hams in other parts of Australia.

Here's all you really need to know in Sydney. First of all, there are usually only three passes to be heard Second, they are either the 3rd, 4th and 5th or the 4th, in table 1, (the ones you memorised, remember?).

## WHAT'S ON THE SCRATCH PAPER This article was written on Sunday, 11th

December, 1977. OSCAR-7 was in the 2 up, 10 down mode that day The Sunday morning VK2 WIA broadcast gave these references for the day

December 11th - Orb.t No. 14052 -- 1002 UTC - 177 Degrees West

These references, unfortunately, are confusing They quote Sydney acquisition time not equator crossing time, which makes it hard to figure subsequent orbits. Furthermore, the broadcast does not explain which figures are given. So the first problem is to know who to believe!

The AR references are usually correct and easier to work with. The December 11th reference from AR was -

Orbit No. 14048 — 0048 UTC — 67 69 Degrees West.

First of all, when we look at the scratch pad, we discover that December 11th is one of those days when there are four usable orbits, instead of three. Orbits 14051 through orbits 14054, inclusive, all begin with a degrees west crossing between 147 and 245 decrees. When there are four, it means that the first and last are quite shallow Perhaps Orbit No. 14051 will only peek over the Sydney eastern horizon for a minute or so. Anyhow, the time to listen is in the last half hour just before Orbit No. 14052 begins. This means we'll subtract about 30 minutes from the commercement of Orbit No. 14052

0828 UTC Orbit No 14052 begins \_30M

0758 UTC (Which translates into 6.58 p.m EA daylight savings time)

We won't really expect to hear it just then, but we'll be ready I'll cheat a bit now and consult a more accurate reference document (which I'll tell you about later). This document tells us that Orbit No. 14051 (because its degrees west crossing was 154 degrees) is indeed a shallow one. At its closest approach to my antenna, it was over 3500 kilometres away and only slightly above the horizon (10 degrees elevation, for the boffins). Furthermore only six minutes of the orbit would be hearable, from 0810 until 0816 UTG. A real test for a 20 metre dipole. Maybe we should skip it

The next two passes (No. 14052 and No. 14053) should be pretty good ones. They'll go higher above the horizon and stay up there longer. It's easy to figure out approximately when to listen from the scratch paper, simply the last hour of each orbit. That means:

Orbit No. 14052 - Listen between 0953 and 1023 UTC Orbit No. 14053 - Listen between 1148

and 1218 UTC It'll be too late to stay up for No. 14054 probably It won't turn up until 85 minutes

A quick look at the degrees column of our factors table shows us that the +3 orbit will work on December 11th, Here's why:

Reference degrees given 877 +3 degree factor +86.2

Ref. Orbit +3 crossing 153.9 (rounds to 154 degrees) 154 degrees is between 147 and 245 degrees which are the useful ones in Sydney Well

can start with Orbit No. 14051 (14048 + 3 = 14051). So here is what is on the scratch paper for our first calculation:

> Reference No. 14048 0048 UTC 87.69 Degrees West Add factor +3 +5H45M +86.2 5H93M -60M No. 15051 0633 UTC 153.89 Degrees West

After that first one, we'll now do the other sums and then we'll talk about what we've got. Here goes:

Reference No. 14048 DOME LITTO 67.69 Degrees West Add factor +7H40M +114.97H88M -60M No. 14052 0828 UTC 182.59 Degrees West Reference No. 14048 0048 LITC 67 69 Degrees West Add factor +5 +9H35M +143.7**ОНВЗМ** -60M No. 14053 1023 LITC 211.39 Degrees West Reference No. 14048 0048 LITC 67.69 Degrees West +11H30M Add factor + B +172.411H78M No. 14054 1218 UTC 240.09 Degrees West

(115-30) after it begins, at the earliest 1218 UTC \* 85 1353 UTC and that's almost 1.00 a.m. EA daylight time Let's see how we're feeling at midnight!

Now, checking the more accurate reference (I'll tell you about it, I promise), here's what actually happens on those orbite

#### **ORBIT No. 14052**

This orbit began with an equator crossing of 182 degrees. It became audible in Sydney at 1902 UTC8 (this is the time given in the VK2 WIA Broadcast) as it rose above the horizon in the Southeast It climbed as it moved north until it reached an elevation of 55 degrees and a distance of only 1700 k.lometres (remember OSCAR is only about 1500 kilometres straight up) Then OSCAR finally set almost due north at 1023 UTC . . , just as it reached the equator to begin its next orbit.

#### **ORBIT No. 14053**

OSCAR began this journey with an equator crossing of 211 degrees. It became audible here at 1155 UTC when it rose just a few degrees to the east of due south. On its trip northward it rose to 29 degrees above the horizon at a distance of just under 2400 kilometres. It disappeared in the northwest at 1215 UTC. Another good pass, with 20 m nutes availohlo

#### **ORBIT No. 14054**

This 4th pass was, as expected, a really shallow one. With good equipment and good timing these are the passes that give the real OSCAR DX if you can make them work for you. At 1351 it rose in the southwest. Eight minutes later at 1359 UTC it set again, still in the southwest. It never got more than two degrees above my horizon and never came any closer than 4375 kilometres.

Maybe now you'll agree that it's ampler than the buffs hinted to work OSCAR with relatively primitive equipment. There's are other technique that's even easier, if you don't like maths. Here's all there is to it! Pick a Mode A evening, type your receiver to 29.5 MHz and eave it there ail evening. If your receiver and antenna are any good at all you'll pick up the OSCAR beacon with its HI HI about every 75 seconds interspersed with numeric CW telemetry when it's in your range. You'll hear it. I promise you. It'll fade in and out as it spins slowly on its own axis but t'll be there. And you know how one thing leads to another Listen between 295 and 29.4 for the hams. See you there!

If you want a really good reference document, send a letter to Bill Johnston, K5NR at 1808 Pomona Drive, Las Cruces, NM 88001, U.S.A. Tell Bill your longitude and latitude as closely as you can as we! as the height of your antenna above sea level in feet. Send him these data along with a cheque for \$4.75 in Yankee do ars (get it from your bank) He'll air mail you back a computer printout based on your antenna. It's easy to use, very instructive, and good as long as OSCAR-7 is up there

## **QRM ON THE BURGLAR ALARM CIRCUIT**

E Manifold VK3EM 267 Jasper Road, McKinnon 3204

Since building and installing the electronic burglar alm in 1974, and as described in AR, March 1977, there have been several false alarms in the last few months, fortunately while we have been at home to attend to them.

EM 401

S-6K

BA 100

Relay

2 X 8 A100.

BC107

A7 mf
25 vw

Floure 2

As they have not been repetitive as to dates or time, it has left a nagging doubt, in case the house were left for long perods, that a false alarm would cause inconvenience to both neighbours and police. What to do?

The only appliance in the house that has ever tripgered the elerm to my know-edge is an electric fan on the same circuit as the alarm power supply, when electric made, although the refrigerator, with a large motor, with frequent switching at all times of the day, has never triggered the elerm.

Tests made on the alarm circuit whing, which was not earthed, with a CR0 and VTVM/RF Probe, then ewitching the fan on/off, showed transient spikes of approximately 2.5 volts across the wiring relatance of 18 ohms, clearly enough to trigger the control translator.

But since there were no domestic appliances, including the refrigerator, operating at the times of the false alarms, the voltage pitkes must have originated on the power lines, or maybe a high power taxi untt. Again aince it has only happened recently, could the CB units immediately outside the house causing RF pick up to be rectified by the diodes in the control trans.stor beer lead.

Retreating to the shack, tests were then made with the FT101B on 7, 14, 21, 27 and 28 MHz at several frequencies in each band, together with FM units on 52.5-148

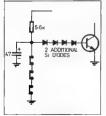


Fig. 1: Modified Control Circuit

and 438 MHz without triggering the alarm circuit. RF interference was not proven.

Again what to do? Firstly a bypass condenser 47 uF was wired across the alarm circuit wiring at the control transistor. See Fig. 1.

This dropped the transient peak voltage to about 1.2 volts maximum but did not provide enough margin for safety, so two more sificon diodes were wired in series with the existing control transistor base leads, to raise the minimum conduction voltage of the transistor.

Subsequent tests have shown it now takes 4 volts AC across the wring circuit of 18 ohms to trigger the alarm control transistor.

These mods were then carried out on the second unit, but where the first unit has not given any more trouble, the false alarms have continued at the business premises, due no doubt to the presence and switching of two 35 h.p. 3-phase motors and auxiliary cooling tower and pump motors for the refrigeration plant.

The base diodes to the control transistor were eventually increased to 8 diodes over a period, without avail.

It was originally considered in the first unit to install a series diode in the alarm circuit wiring at the transistor input, but thought that at the cut-off point during the interfering pulse the base voltage could rise sufficiently to trigger the alarm.

Since the 8 diddes in series with the translator base were not effective in the second unit, a 400 PIV power diode was installed in the alarm circuit wiring as a trial to determine if the interfering pulses were long enough to cut off the series diode, and allow the 47 mF condenser to charge to the point of triggering the control transactor, See Fig. 2.

To date this has not occurred, despite the many temperature controlled sw tching cycles of the refrigeration plant motors during each night's operation.

If now appears that the time constant of the 5 RK realstor and the 47 mF con-denser are long enough to offset the duration of any pulsed interference induced into the alarm circuit wiring, but the rumber of diodes in the base circuit of the translator determine the voltage to which the 47 mF condenser can charge before triggering takes place.

While the random nature of the interference has taken a long time to establish and track down the cause of the false alarms in these two installations the remedy could be applicable to other cases.

Since one genune and two false alarms gave the police a high speed dash of 8 miles each way in the early a.m., and a few alarms invest.gated and found false, we feel more confident that any future calls will be "for real when the whistle blows next time".

## DX FROM VITE LEVU — FIJE ISLANDS

Bruce Bethole VK3LIV

On a recent cruise around the Fill Islands, I had the pleasure of meeting Upali Ranssinghe 3D2UP, from Suva.

Suva is the capital city of the Fijian group which consists of approximately 300 islands Only 80 or so are inhabited (mostly by natives and indians), and the main island. Viti Levu, is where the action

There are 23 licensed amateurs in Figi, but only eight are active at the present time, and all are ocated on Viti Levu.

Upali has been in Fisi for 18 months and is an angineer with the Suva City Counc I He originally comes from Sri Lanka and

holds the call 4S7UR. Upali hopes to return to his Sr Lankan home in about two I first worked Upali in February 1978

and he is usually active most evenings between 0600Z-1200Z on 20 Mx between 14,200 and 14,250 MHz

His excellent QTH is situated about 400 ft, a.s.l. with a south-easterly aspect and overlooks Suva herbour At the moment he is using an FT101E

and GSRV However, the day we had our evebal QSO, he had just finished building g 2 element 20 Mx spider quad at 30 ft. which was yet to be tested.



Upali with his new Spider Quad.



While I was there Upali fired the FT101E into the new guad and, using his Armstrong rotator, turned the guad toward VK It appeared to be working perfectly, 1.3

to 1 SWR over the entire band, with a good F/B ratio. We worked VK2, VK5 mobile and ZL,

all signals received were 20 dB over S9 Upali hadn't possessed a beam previously and he was delighted by its performance

I asked him about the performance of his GSRV and the report he cave was amazing Because of the tropical latitude of Fiji

and the excellent QTH, Upali has been able to obtain global communication almost at will with his G5RV

There is a local Radio Club on the island, but it is inactive momentarily

The British Government has given the Fiji Institute of Technology (FIT) complete equipment to establish an amateur station, and it is hoped that the Radio Club will once again become active with the acquisition of this gear

Strange as it may seem, with the 100s of duty free establishments, there is no commercial amateur radio equipment available in Fiji probably due to the lack of demand.

There is the usual assortment of CB hand held transceivers in the duty free shops, but I did not see any of the units displayed which would be suitable for installation in a vehicle (only a matter of time, I guess!!) Apparently CB is legalised in Fill on a

restricted basis, but I was unable to find out further details. I did not see any evidence of CB pro feration like it has occurred in VK.

There are no TV stations in Fiji, and I was therefore intrigued by some large TV arrays situated on houses on the hilitops.

Yes, CH0 TV Brisbane, Me bourne and New Zealand is available to those who have a high enough location for the ducting, etc., that occurs - most times with noise free reception all year round

Upply and his charming wife, Shreeni, have four children - one boy and three girls

The girls don't appear to be interested in amateur radio, but Upail's 15-year-old son Darshaka is showing a keen interest and he hopes to go the whole way and study for his licence very soon

Upali requested me to inform other amateurs vis AR that he would be very happy to have an eyeball QSO as you pass through the area, after arranging preliminaries on 20 Mx.

# AUSTRALIAN DRAFT PROPOSALS FOR WARC RELEASED

On the 28th May, the Minister for Post and Telecommunications released the draft Australian proposals for the World Administrative Ratio Conference in 1979. Those proposals do not necessarily represent Australia's final position, but have been released to enable community discussion prior to the adoption of a final position.

A number of proposes from the Amelium Service have not been included, for example, a new bend at 160 to 190 Met. but other proposals have been adopted in ameteur Service is the Australian proposa for a new band at 10,1 to 10.2 Metr. a new band that is also proposed in the Federal Communications Commission (USA) on the 5th Mey. 1978. New bands (USA) on the 5th Mey. 1978. New bands (Leph 200 Metr. we do are also proposed at part of the Australian fresh affecting the Ameter Service are as follows.

#### 1800-1900 kHz

Amateur Secondary shared with radio navigation and radio location. This is an increase of 40 kHz for actual Australian a ocation, but a Regional reduction of 100 kHz.

3500-3900 kHz

Amateur, shared with Fixed and Mobile in proposed for Region 3. At this stage, Committee 8 considers the present arrangement in Australia, the Band 3500-3700 kHz is allocated to the Amateur Service: the Band 3700-3900 kHz is allocated to the Amateur Service; and the Band 3500-3900 kHz is allocated to the Amateur Service; all proposed that 1880-8000 kHz in all Regions be allocated to the Broadcasting service.

Amateur and Fixed shared all Repigns

7008-7100 kHz Amateur, Amateur Satellite, exclusive all Regions.

7109-7500 kHz Broadcasting exclusive all Regions, 10100-10200 kHz

Amateur exclusive A new band. 14000-14250 kHz

Amateur, Amateur Satellite, exclusive. No change.

No change. 14250-14350 kHz

18100-18300 kHz

Amateur, Amateur Satellite, exclusive. A new band. 21009-21450 kHz

Amateur, Amateur Satellite, exclusive.

Amatour Am

Amateur, Amateur Satellite, exclusive. A new band.

28.000-29.700 MHz
Amateur Satellite, exclusive.

No change. Footnote 226 — that in Region 2, Australia and New Zealand, the

Amateur Service may operate between the frequencies of 26960 and 27230 kHz.

47-68 MHz
Fixed, Mobile and Broadcasting in Re-

gion 3. In Region 1 Broadcasting. In Region 2 Amateur 50-54 MHz. Footnote 246A — In Australia, the band 52-54 MHz is allocated to the

band 52-54 MHz is allocated to the Amateur Service on a secondary basis. 144-148 MHz

Amateur, Amateur Satellite, all Regions.

148-148 MHz Amateur

Amateur, Regions 2 and 3. 429-450 MHz

Radio location shared Amateur secondary, No change, allowed SS-39 Mitz. The Amateur Concentration of the Concentration of the Concentration on condition that no harmful interservices, operations in accordance with the Table. Administrations any harmful interference caused by missions from any Amateur Satellite is immediately eliminated in accordance with the provisions of No.

1215-1240 MHz

Radio navigation Satellite. Radio location shared Amateur secondary

1240-1300 MHz
Radio location shared Amateur secondary.

Amateur, Amateur Satellite exclusive A new exclusive band. 2110-2420 MHz

Radio location shared Amateur, Fixed and Mobile secondary.

3300-3400 MHz

Radio location shared Amateur secondary.

Fixed Satellite, radio location shared Amateur, Amateur Satellite secondary A new Amateur Satellite band.

Fixed Sate

Fixed Satellite, radio location shared Amateur secondary. 5856-5970 NMI

Radio location shared Amateur, Amateur Satellite secondary. A new Amateur Satellite band

Radio location shared Amateur, Space Research (Deep Space) secondary

Radio location shared Amateur

10000-10475 MHz

Radio location shared Amateur secondary

10475-10500 MHz Radio location shared Amateur.

Amateur Satellite secondary, A new Amateur Sate lite band. 24-24.05 GHz

Amateur, Amateur Satellite, exclus ve. 24.95-24.25 GHz

Radio location shared, Amateur secondary.

49.5-50 GHz
Fixed, Mobile, Amateur, Amateur
Satellite, shared, A new allocation.

Saterlite, shared

Earth exploration Satellite Space Research. Radio location shared, Amateur, Amateur Satellite secondary. New allocation.

72-76 GHz

Radio location shared Ameteur, Ameteur Satellite secondary. New allocation. 165-170 GHz

Radio tocation shared Amateur, Amateur Satellite, secondary New allocation 240-250 GHz

Fixed radio location. Mobile sherad, Amateur, Amateur Satellite, secondary, On the shared bands above 3400 MHz, a new Footnote 3764. Is proposed that no harmful interference shall be caused by the Amateur Satellite Service to other Services. Administration shall ensure that harmful interference caused by smission from an Amateur. Satellite is immediately efficiented in

# THE BACKGROUND TO THE AUSTRALIAN DRAFT PROPOSALS

accordance with RR1567A

David A. Wardlaw, VK3ADW, Federal President, Wireless Institute of Australia.

Michael J. Owen VK3KI, IARU Lisison Officer.

When a World Administrative Radio Conference was first proposed, the institute recognised that a general review of Article 5 (the frequency table) was of vital importance to the Amateur Service. The importance to the Amateur Service. The Institute immediately made representations to the Australian Post Office, the Department the responsible for frequency ment the responsible for frequency to ensure the Amateur Service was adequately represented in the opportunities of the Australian position.

At that time the WARC was only a general proposal and no date had been eat. In fact, some were questioning whether such a conference was practicable. Despite these reservations, the Sacretary of the Department gave assurance that the Australian Amateurs would be consulted fully through the WIA.

Early in 1978 the Institute received in institution to send its representative to the institution to send its representative to the institution of the Australian Preparatory. This group was to accept responsibility for the Australian preparation change had occurred in frequency management as the Australian Postal Commission and the Australian Postal Commission and the Australian Postal Commispate the old Postmasker-General's Department had been both a frequency user and a frequency manager, the new Postal and Telecommunications Department had been formed and was responsible for frequency management without being a frequency user Itself. The first meeting of the APG was chaired by the Assistant Secretary. Postal and Telecommunications Department, and included representatives of all the services that were involved in the use of the radio frequency spectrum. Approximately 25 people, including representatives of the Postal and Telecommunications Department, were present at this initial meeting. At this meeting seven committees representing the services using the radio frequency spectrum were established. It was decided that the chairman of each of these committees would be a continuing member of the APG. In addition, a number of others were invited to join the APG to ensure that all frequency users were properly represented.

David Wardlaw, President of the Wiseless institute of Australis, represented the less institute of Australis, represented the Amateur Service at this meeting and he was appointed Chairman of Committee 2 which was given the responsibility to report on the Amateur and Amateur Satellite Service, Each committee was requested to prepare a paper specifying the requirements of each Service through the year 2000. Committee 2, the Amateur Service and Amateur Satellite Service, based its scenario on the position adopted by the international Amateur Radio Union. It relied heavily on the matera prepared by the IARU President's Advisory Committee but modified the arguments to suit the Australian situation. The Institute beavers to the Constitution of the Presentation of the Amateur Service case oldows.

A further committee was formed to assess the conflicting requirements of each Service and to produce a provisional proposal which was the subject of further discussions by the APG

From these studies a first Draft of the

Australian proposals was prepared and each committee was asked to study inis draft. The second Draft was prepared on the basis of the additional comments made by the committees in respect of the first Draft.

The comments included in the draft proposal stress the dealrability of the allocation of a family of frequency bands to allow the propagation characteristics of the HF band to be adequately exploited.

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# TV CHANNEL 5A - (137-144 MHz)

Suggestions had been noted that TV Channel 5A should be used for Ethnic broadcasting inevitably this would result in the use of this channel in capital cities.

in the use of this channel in capital cities.

As this is of great concern to all amateurs, a letter, copied hereunder, was written to the Minister for Post and Tele-

Copies of this letter had been sent at once to each Divisional Federal Councillor with the recommendation that members be encouraged urgently to protest individually or as groups to Parliamentarians.

This is the letter:-

The Wireless Institute of Australia, Federal Executive.

P O. Box 150, Toorak, Vic. 3142 26th May, 1978

The Hon. A. A. Staley, Minister for Post and Telecommunications, Parliament House.

Minister for Post and Telecommunications Parilament House, Canberra, A.C.T. 2601,

Dear SIr,
The W reless institute of Australia representing radio amateurs in this country desires to record its great concern at the continuing, let alone increased, use of Channel 5A for television transmissions. An increased use is, at less tecording to a report in the Melbourne "Age", suggested for eithic broadcasting stations.

May we respectfully remind you that the tevision connection unique to Australia and not in accord with the international agreements covering the use of radio frequency (that is, Article 5 of the Radio Regulations of the international Telecommunications Union). Why should we be concerned with the non-conformity of this country to that international agreement.

The allocation of radio frequency by the TU has that organd to the "neighbourhood" in which a particular use is placed. The Ametur Service Involves the use of radio frequency by Idensed radio frequency by Idensed radio non-parson in exery 1,500 in Australia is a licensed amateur Channel SA is 137 to 144 MHz. The Ametur Service is allocated in Australia and throughout Region 3 the band is 144 to 146 MHz.

It is inevitable that the use of Channel SA for tolevison purposes results in Interference from annaturu stations operating in one of their most used barda to retreat the state of the s

ansetures of the 6 montre ameticur band allocated to the Ameticus Fourice because of the same interference problems that will arsie with the use of Channel SA. Allocation of Channel SA. Allocation of Channel SA. Allocation of Channel SA. In areas where mentally silent the ameticus cost of the two most used amateur VISF bands. In fact, these two bands are the lowest bands allowed to limited consees (that is, allowed to limited where the consecution of the two couldings of the second to the consecution of the two couldings of the consecution of the consecution

qualification). To take the "neighbourhood" analogy further, neilty an analogy based on town planning principles, one dose not put a glue factory or tanking works in a real-town planning that the adjoinant use of land for different purposes should be compatible. It is a principle of infequency management that the adjacent use of radio frequency management that the adjacent to the following that the properties of the pr

That is recognised by the ITU, but has been disregarded by the Australian regulatory authorities.

In fact, the Institute has understood (even it it has not accepted) the pressures that led to the allocation of Channel SA. Those pressures no longer exist; it is fancitud to suggest that the introduction of URF channels would today impose any real burden on our community. The Militakers are professes should make him conceptiones should make him conceptiblely aware of the general distribution.

throughout the community of television receivers capable of receiving UHF channels.

The Institute is, of course, concerned that radio amateurs can five in their community without conflict with their neighbours or without restriction on the legit-mate use of bands allocated to them

We would, however, be surprised if other frequency users (whose adjacent use is compatible with our use) did not share our concern. The Minister's advisers are, no doubt, fully aware of the use of the band 137 to 138 MHz by meteorolog-cal satellities, for space research, and space operations (with Channel 5A not an ediscent use, but a use in common).

May we respectfully suggest that the Minister should enquire of his advisers how many satellites have been launched using these frequencies in the past five years?

Likewise, the Minister is no doubt aware of the International Telecommunications World Administrative Conference to be held in 1978. This Conference raises the possibility of a majority of nations agreeing to a use of that part of the radio spectrum covered by Channel SA that is totally incompatible with television broadcasting.

This matter is drawn to your attention because of the extraordinary concern expressed by so many amateurs and because



we are firmly convinced that Australia has today, in realistic terms, the option of introducing UHF television and thus preserving harmony with the rest of the world and avoid a conflict arising from incompatible use, a conflict that we see as being totally unnecessary

It is no longer necessary to sile the tanning works in a residential area. The introduction of UHF channels provides a solution. To do otherwise is only to enlarge the problem that is already real at a time when the appropriate course in technical and community terms seems to us

to be clear.

I am instructed to seek your urgent assurance that allocation of Channel 5A for further television broadcasting services is not contemplated Yours sincerely,

D. A. Wardlaw, President.

# SIMPLIFIED INTRUDER WATCHING

Please read the following, it applies to all amateur bands and all intruders (including "pirates"), in conjunction with the insert in this issue.

At the Federal Convention is Nebbourne during Autzes week-end I was given an excellent hearing on intruder matters. Is tressed the fact that WIA, members are very loaths to act as IW. Observers, and one suggestion was put forward that I am following up. It amounts to this — instead of members taking on "official observer" status, they be smore free and not obligated by that status. The felse is that members keep slongslied them on their operating desk a copy of the lesent form, which is designated "Observers' Log Boter".

In listening around the bands, or in normal operating, when an intruder is heard an appropriate entry would be made on the form, and at the end of each month the sheet/s would be forwarded to your Divisional Co-ordinator (as listed below).

From your standpoint this would take the onus of being "official" off your shoulders, and I urge all members to start now to stimulate more activity in intruder watching to make it the success that it should be.

The Intruder Watch Service works in this way Say, for instance, that on some occasions your favourite net or frequency Is subject to harmful interference from a non-amateur transmission, and you want to do something about it. You note the occurrence on the Observers' log sheet, making as many observations as you can or different days, then at the end of the month you forward the sheet to your Coordinator. Many reports will bring results, but not just an isolated report, so get all the participants on the net also to send in their findings. Thus, after a while, you'll be used to doing this, and many reports wi be received, and some action taken, Identifications are essential to get action, but what you hear without ident could be most useful to tie in with somebody else's reports When compared these often build up a dossier on the station concerned.

Observers' Log Sheets are available from your Co-ordinator, or you may prefer to rule your own By being alert to in-

truders when operating. I am sure will make your listening stuch more interesting and, Short Wave Listeners, so long as their equipment is accurate, can perticipate Be enthusastic, note all infringements that you hear, and send your sheets in monthly They'll be much appreciated, and t WARC 39 will be used to condemn those countries who allow stations to invide into our Analeuric bands. You'll be an a work of the period when you have an a work of the period when you have an a work of the period when you have a service of the period when you have not the period when you have the period when

Your Co-ordinator is as hereunder:— VK1AOP — Ted Pearce, 45 Carnegle Cres., Narrabundah 2604

VK2AFG — Les Weldon, 11 Raymond Ave., Northmead 2152,

VK3XB — Ivor Stafford, 16 Byron St., Box Hill South 3128.

VK4KX — Murray McGregor, 6 Murray St., Red Hill 4059.

VK5LG — Leith Cotton, 64 Weroona Ave., Parkholme 5043. VK6WT — David Couch, 9 The Grove,

Wembley 6014.
VK7MX Max Ives, P.O. Box 12, Devonport 7310.

VK8HA — Henry Andersson, P.O. Box 1418, Darwin 5794.

Alf Chandler VK3LC, I.W Co-ordinator.

PLEASE KEEP LOG SHEETS BESIDE YOU AT ALL TIMES.

### TECHNICAL CORRESPONDENCE

The Editor, 22 May, 1978

Dear Sir,

In reference to an article in your publication of April 1978, page 18, "A scanner for the 2m Kyokuto", by Martins Willems VK4ZIL.—I have constructed this it amount tound two errors in the circuit diagram. The 4T uF capacitor at pins 10 and 11", the IC A should be approximately 0.25 to 0.33 uF and the 0.025 uF at the pins of IC B should be 4T uF.

These values are subject to user's choice, depending on how fast the scanning is to take place in the first instance and how long the delay is after detecting a busy channel in the case of IC B.

In the last paragraph, mention is made of one "round trip" taking 14 seconds, which is much too fast. With the 0.22 of it takes about 40 seconds. This sounds allow, but not when one watches the 10 start EAR lashing along, it actually is so fast that after the stopp ag of the scanner below, the start is not the rest step from the subset place it is on the rest step from the subset place it is on the rest step from the subset of the scanner is not the rest step.

I hope this note will save others from the difficulty of sorting it out the hard way as I did, otherwise it is a good project and I use the device quite often.

Sincerely,

Brian Field VK2MK, 4 Kapyong Street, Belrose 2086.

An errate has been received from the author concerning one of the capacitor values and this was published in June issue.—Ed.

# Photographs for AR

DON'T KEEP THEM TO YOURSELF

公

Send them in - NOW

# **NOVICE NOTES**

For your convenience and guideline, some of the more useful steps to be taken in elimination of Interference are listed below. (1) Completely shield your transmitter.

(2) Install a well-shielded low-pass

filter (3) Reduce transfer of harmonics be-

tween stages by means such as loosely coupled grounded link coupling between stages and electrostatic shielding in RF

coupling transfers.

(4) Install a high "Q" series inserted parallel tuned harmonic trap in the plate circuit of each stage, as well as grounded absorption trap circuits tuned to the interfering harmonic and closely coupled to the far end of the plate tank circuit of all transmitter circuits. These trap circuits have been found to be particularly effective on the reduction of harmonic radiation.

(5) Make sure there is sufficient capacity in the final stage plate circuit to provide a high circuit "Q

(6) Operate the final stage of your transmitter with the lowest grid bias conelatent with reasonable efficiency, and do not overdrive it. (7) Instal, stubs at output of the trans-

mitter cut to appropriate length for troublesome harmonics

(8) Filter and shield all exposed power leads between the transmitter and the transmitter power supply and between the power supply and the AC line.

(9) Avoid using a directly excited voltage fed antenna.

(10) Install a current fed single band entenna that will not readily radiate harmonics of the operating frequency.

(11) If necessary, replace your antenna feeder with a coaxial cable to reduce coupling between the antenna feeder and conductors in the vicinity, particularly the power wires inside the building in which the transmitter is located. (Other wires in addition to the transmitting antenna can radiate, especially nearby wires or conductors of critical length. This can in effect cause a rise in radiation of harmonics ) (12) Reduce standing waves to a mini-

mum on your antenna feeder line. (13) Try re-orienting your antenna with

respect to the television receiver to see If a null in your radiated pattern will reduce or eliminate the interference, or try to locate your antenna further from the TV antenna -From World Radio News March 1978.

#### REMEMBERN

It cannot be stressed too often that much worry and frustration over projects which don't work can be avoided by paying attention to those points which should be simple and obvious but are often overlooked. Are the transistors, for instance, inserted the right way around? Have you the top and bottom views mixed up? Have you got badly soldered joints? Normal evesight is just not good enough to find dry joints and faults in circuit boards, and it is essential to get hold of a watchmaker's evenlass and use it whenever checking for these faults. Then there are dry joints which are badly soldered or perhaps not soldered at all, and the other extreme where blobs of solder are bridging a couple of connections. This can very easily happen with duel in-line integrated circuits where the pin spacing is only 1/10 of an inch apart Open circuit or wrong value resistors and capacitors can be another source of trouble as can electrolytic canacitors which have a high leakage. Make a list of all these possibilities starting with badly soldered joints and work through the list systematically and the chances are about twenty to one that you will find the trouble is due to one of these faults - simple and obvious after you find it, but very frustrating and puzzlino until you dol - From Zero Best April 1977.

#### TOWER INSTALLATION HINTS

Evan Rolek K9SQQ

Here are some hints for tower installation which might be of interest.

1. Mount tower sway from the house. if possible, to avoid lightning flash-over.

2. Use connectors for all coax lines and rotor control where lines leave the tower. Disconnect when not in use or when storms are in the area. 3. Install ground rods in bottom of hole

for base before concrete is poured. This will allow a deeper, more effective ground than a rod next to the concrete base. 4. Run ground radials away from the tower in case one decides to shunt feed

the tower on 75 or 160 metres at a later dete 5. Contact a reputable ready-mix concrete firm to discuss the load rating and

slump for your particular application. 6. Build a frame so that the base will be sloping to enable rain and snow runoff.

7. Seal tower joints on the outside with silicon sealer.

8. Crumble window screen and insert in bottom section of tower to prevent spiders from entering the tower and causing frost build-up. 9. Use a thrust bearing at the top of

the lower

10. Mount rotor as low as possible in the tower. This will enable easy maintenance and allow excess mast to act as a torsion bar, rather than the tower

11. Use at least some cable clamps for the coax and not just electrical tape. 12. Seal all coax connectors with silicon seal where they enter the antenna.

13. If the antenna must be over a patlo, use an owl decoy from a sporting goods shop atop the antenna to scare away birds which are not tollet trained 14. Seal or fill the mount which is

mounted in concrete in order to prevent "freezing expansion".

15. Even if the tower is aluminium, use several coats of spray paint on at steel hardware such as nuts and bolts

16. For "self-supporting towers" have some storm guy wires handy to attech to the house or anchors in case severe storms are heading your way.

17. Devise a maintenance bracket of some sort to prevent antenna rotation in case the rotor is removed for maintenance. -From World Redio News March 1978

#### psrTOWNSVILLE BOOKS DONATION

To help foster nterest in emateur radio,

Townsville Amateur Radio Club recently decided to make an annual donation of relevant books to the two municipal I braries in Townsville At the same time, the libraries agreed to subscribe to AR The photo shows the Club President, Peter Ranto VKAPV, presenting the first of these books to the ONE HUNDRED AND SIXTY METRE NET

Peter Brown, VK4PJ, and John Asrase VK4QA have for the last few months attempted to create interest in the top band in S.-E Qld by regularly act vat ing one point eight two four on single a de band. The scheduled limes do very, usually from 08.45 GMT to 10.00 GMT each Sunday Although the band at times seems to be very noisy it is very surprising what can come through Some weeks VK2BVS/P. Blue Mounteins, came in with 5 and 8 s gre s Static noise nine prus plus does not stop ipswich coming in at Radol 16e with good signals.

Roy VK4ZQ managed to work on SSB into the U.S. West Coast in November last year Others worked into the Solomons and Kernedet. With the winter season coming up in a few months, the southern States will be romping in again, 5 and 9 pus into VKS and so on Why don't you get ready for top band and ,oir

the Queens and net on Sundays, if only to find out If you have a strong second harmonic radiation

# Can Anyone Design

- POSTERS -

BADGES -

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#### ATV NEWS

#### PETER COSSINS VK3BFG

In the January edition of AR we published a circuit of a cathode modulator being developed by Ian VK3ALZ. Since then Ian has been busy with modifications and improvements, including a circuit for intercarrier sound. The following information should enable constructors to achieve a correctly adjusted modulator which will produce very good fast scan pictures.

#### VK3ALZ VIDEO MODULATOR Mk. 2

General Constructional Q8 and Q9 should be adequately cooled with heat sinks mounted on polystyrene blocks to reduce the capacitance to chassis. The collector of Q10 is a virtual earth and therefore Q10 can be heat anked to chassis in the normal manner. Q6 and Q7 are provided with TO5 heat sinks. DC balance is important otherwise everheating of Q8 or Q9 will occur. When sound is not required the sound input is shorted to earth.

#### ADJUSTMENT PROCEDURE

#### (a) Video Modulator 1. Replace the 6/40 cathode connection with a 250 ohm resistor between the collector of Q9 and the 110V rail.

- 2. Adjust VR2 for VBE = 0.7V, Repeat adjustment for Q10 using VR3.
- 3. Adjust VR4 to its earthy end.
- 4. Connect a sine or square wave voltage source of approximately 0.5V to the video input. Connect a CRO to TP1
- and adjust VR2 for best gain and linearity. 5. Remove the signal from the video input and balance Q1 and Q2 by select-
- Ing 22 K resistors Re-connect the signal and re-adjust VIDS
- 7. Connect a CRO to TP2 and adjust VR3 for best gain and linearity.
- 8. Check that the temperature of Q8 and Q9 is the same (approximately 70°C).
- 9. Check the bandwidth of the system with a suitable signal generator (the 3dB point should be approximately 4.5 MHz).
- 10. Check the voltage gain of the system (approximately 140)
- 11. Remove the 250 ohm resistor in the collector of Q9 and connect the collector of Q9 to the cathode of the 6/40. (Refer to Fig. 2 AR January 1978.}

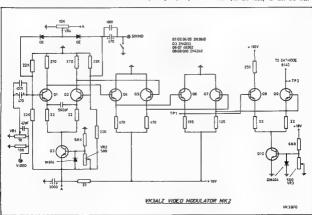
(b) RF Section Before the modulator is switched on the grid and plate tank circuits should be resonated at the operating frequency.

- 1. With no power on the modulator place a jumper between TP2 and earth
- 2. Open circuit the screen of the 6/40 and tune the grid tank circuit for maximum arid drive.
- 3. Re-connect the screen circuit and tune the plate circuit for maximum RF read-
- ing on a line reflectometer 4. Turn the supply off and remove the sumper from TP2.
- Switch on the modulator and transmitter supplies. 6. Connect a video camera to the modulator and observe composite video from
- a line DC modulator on a CRO or monitor

#### MOTES

- 1. There should be no white clipping or sync. tip compression up to 75 per cent of maximum setting of input potentiometer
- 2. The grid drive reading vanishes when video modulation is applied. 3. If there is hum present additional
- filtering of the RF H7 supply is required, or there may be earth loops between the supplies, camera, etc. 4. RF power output should decrease with
- modulation (c) Sound Modulator

If you have achieved about 300 lines reaglution you are ready to test the Inter-



carrier sound system. 1 Adjust the sound oscillator to 5.5 MHz. Adjust the series resonant traip for minimum frame buzz. Adjust the output potentiometer VR7 for a suitable level If this potentiometer is set too high degradation of the picture quality will re-sult

3. The input and bias potentiometers VR5 and VR6 should be adjusted for correct gain and best deviation linearity

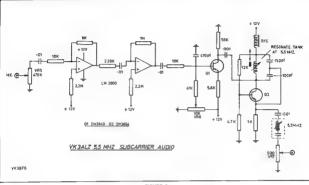


FIGURE 2

# AMATEUR RADIO ON NATIONAL TV

#### AMATEUR RADIO ON NATIONAL TV

During May and June the 7 National Network showed a half hour segment depicting amaleur radio in their program "This week has seven days". The W.A. and senate radio received much needed publicity and many enduries were received as a

repult Excerpts from an ARRL film were shown and several Victorian ameteurs were interviewed by David voluntion and Deane Blackman VKSTX

#### PHOTOGRAPHS

- No 1 Deane Blackman VKJTX (I) and David Johnston discuss homebrew equipment with Paul Tay or VKSBLY No 2 Bob Arnold VK32BB (centre) explains
- Amatour Satel ites No 3. Doug McArthur VK3UM (r) gave an SSTV
- demonstration No 4 Ron Fisher VK3CM showed viewers TS820 and gave details of Amelour Radio
- Photos 'o" air' by VK3UV





Photo No. 2







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FT301, 301\$, FT7 etc. 13 5\ fully regulated at 25 amps' Makes an ideal bench supply

Calling all

full-power rig you aren't allowed to use? The FT-301S is the novice version of the 301. 20W out, 80-10m. And nearly \$300 cheaper!

Cat 0.2880 accessories for amateur use - and the lest is growing daily! Call in and discuss your requirements today.

FULLY APPROVED 13.8V MAINS SUPPLY

4 AMPS PEAK (2A CONT)

Operate the FT 7, FT 227R etc from our FULLY APPROVED power supply Why take chang with un approved supplies? Cat M 9545

#### EASY TERMS AVAILABLE TO APPROVED APPLICANTS ON ALL ITEMS PRICED \$111 OR MORE



FT-227R -FULL 2M BIG

As reviewed in the March issue of Electronics Austral a. Full 2 metre, synthesised FM unit with memory. Ideal for repeaters and duples operation. Best value rig available today! Cat D-2890

**500MHz COUNTER** Fabulous professional quality - 500MHz

counter As reviewed in April E A. 248V or 12V operation. And it's even cheaper if you have a sales tax exemption!

YC-500S -



FT.7 . NEW HI MOBILE RIG

Here at as! The new HF solid state 80 -10 metre mobile transceiver. It's ideal for novice use, too. The best mobile unit going<sup>1</sup> Cat D-2856



Use the FT 7 or FT 301S as a full

power unit with the 200W I near amplifier. One knob band switch ing, no tuning required Cat D-2884

STOP PRESS: NEW FRG-7000 DIGITAL RECEIVER/CLOCK NOW IN. CALL IN TO STORES FOR DETAILS. (Cat D-2848)

lick now has stocks of two sizes of aluminium tubing olus uitable antenna brackets for you to build your own beams Call in and pick up your free leaflet on building 2m beams. So simple, you'll wonder why you didn't build one before!

d an amplifier 45 watts out on 2m. Very simple highly reliable transistor circuit. Full RF switching, ideal for mobile use (12V). Build the basic PCB, or but in a case as pictured. (\$27.50 price applies to PCR and electronics only - case & heatsink extrail Par K 3132 Extres (as shown

reatsink (Cat H 3460) Box (Cat H-2743) Undrilled, plain panels

\$4.20 PL 259 connectors (Cat P 2340) 2 required \$1.45 ca 4A.13.8Vunder \$30

FT 227R etc Complete kirt, including Impleme year owe.

What does every

in the shack! Tunes orcurs checks rediation use as a

OH 0.1222

terator the uses of a dipper are almost.

This Leader transition dipper is a fully port.

amateur need?

able professional quality unit incredible value fe

\$29<sup>50</sup>

F entropies poly case and heartunk

*DO IT YOURSELF* 

£4.75

An about about

outh all extras \$39.95

#### ALUMINIUM TURING

20mm o.d. x 1.5enm x 2m length (for booms) Carl D-4556 SA 00 10mm o.d. x 1 2mm x 2m length (for elements) Carl D-4654 SZ 00

RRACKETS

boavy duty all metal Cut D.4652 \$1.00

Converters & Preamps

Cooy 6m DX or DSCAR on 2m Next lettle unth complete seth stal 28 to MMHz nutaut 2048 metre version . . 2 matre version Car D.3833

REDUCED SIG FROM LAST YEARS PRICES MEED A LITTLE MORE GAIN? These low ness pre-arres ave you 20 to 30d P more. You can even mount them right at the

antenna for lowest possible neese figure 10 metro vocuos - . Cat D 3877 ---6 meter version ... Cat D 3806 Ces B. 3802 SAVE \$13,10 WERE \$39 DD EACH

produces a full

\$29.50 SAVE

FREE!

# Build this transporter Converts on 77MHs

simple to build. Was \$99.50 - sare \$10.00



# The ULTIMATE in low-pass

filters Precision built 4 section filter Massive power rating - 5000 W PEP on SSB. Maximum attenuat ion is on TV channel 2 - 75dB

Insertion loss is less than 0.5dB 52 ohms impedance. Has SO-239 connectors. Cat D-7086

# **Books**

monel generator

Dick has an ENGRMOUS range of books for amateurs, hobbyists, beginners, professionals . . .

The titles here are only a small sample: call in to a store today and see the rest



HANDBOOK The standard reference esense for amales is dated for tirt about time you replaced that 1989 edd on Cat 8-2218 S12 75



BATTIO HANDROOK neredibly compreh eur radio communio batic theory depan on Ever 38 chaut

\$23.95



OSCAR A 325 word may 550 A acros - and half task to you I you snow

P.S. DSCAR is an

147 Nume Hory, CHULLORA. Pp. 642-8622 182 Pacific Hury, GBRE HILL. Ph. 420-5211 36 Green Street, PARRAMATTA, Pt. 883-1133

186 Logna Rand, BS/RANBA, Pp. 301-6233 263 Wright Street, ABELANDE, Ph. 212-1062

99 Lonalate Street, MELBBURNE, Ph. E7-9634 566 Bridge Road, RICHMOND, Pp. 42-1614

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Frilogy Elect. Supplicated Components Don House Electronics DGE Sales M&W Electronics

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GRACE BROS

1168 Gold Ceast Hwy, Palm Brack QLD. Ph 34-1246; 239 Musgrave St, Rockhampton QLD. Ph 27-4004; 97 Mitchell St, Bendiyo, VIC. Ph 43-1977 97 Matchell St, Bernigo, VtC, Ph. 83:1977
1228 Rishturs; St, Hobart TAS, Ph. 34:822
67A Brisbane St, Lawnorston, TAS, Ph. 31:5815
65 Aphibanne St, Developor TAS, Ph. 31:5815
Town Centre, Propies St Biolg, Elizabeth SA, Ph. 256:9186
51:szabeth SS, Mit Gambire, SA, Ph. 256:604
105 Suning St, Paris MA, Ph. 323:1509
10 See, SS, Albany WA, Ph. 41:2851,

\$2 Priscas Mery, Wallongsong MSW, Ph. 82-121 78 Brisbane St, Tammarth, NSW, Ph. 65-138 145 Queen St, St Marys, NSW, Ph. 622-4442 2 Merrina St, Geridon NSW, Ph. 498-1388 44 Broom St, Nemostatic HSW, Ph. 628-649 18 Pussel St, Clearge NSW, Ph. 52-649 18 Pussel St, Clearge NSW, Ph. 52-640 99 Fitzmentors St, Wagay NSW, Ph. 21-2424 9 Coppiland St, Wagay NSW, Ph. 21-2428 395 Mulgarer Rd, Carmo DLD, Ph. 94-1055

# **REPORT ON 1978 FEDERAL CONVENTION**

What is a Federal Convention?
You are a member of a Division. If you want to keep in touch you go to meetings, especially the Annual General Meeting

the Annual General Meeting But how about Divisions? Well, they meet together once a year in the Annual General Meeting which is called the Federal Convention.

And what goes on at this annual Convention? Call in on Ch. 4, registration, fox hunts, displays of goodies, prizes?

Sorry, the only prizae are what the WIA can extract out of the Government in the form of better operating conditions. And It at the Federal Convent on that these things are discussed and firmed up from dreas throught up by the Divisioned delegates. In turn these ideas come from you, the member

You see, all the Divisions agreed long age that one big strong voice is better for smeteur radio in Australia than a lot of little voices. And that is what the Federal W7A is all about.

Anyway, this year as in 41 previous years, the

Anyway, the year ee in 41 previous years, the divisions were all represented Each by the Federal Opuncillor and all but one, by Alternate Councillors, and by other technical experts too.

For the 1978 Federal Convention dealt with a number of electrical questions and the need to

number of electrical questions and the need to have Australia-wide standardisation. Also delt with were many Novice licensing matters and such things as encouraging members, recruiting, public relations and many others. The Convention ran through from the Friday

The Convention ran through from the Friday ewaning preparations, Saturday Sunday, to Monday, 24th April, with many late right working parties trying to resolve many questions for final discussions in the formal part of the Convention. Around 45 hours of good solid work without any relexation.

The Faderal Councilions were Rex Reseabled WKIGS, Tim Mills WIGZETM John Peyer WIGABD, hore Will son WIGAPP, land Hunt WIGSOX Nail Plandolf WKIME, and Pales Fifth VKIPS. The Alternation Councilions were Tad Howell WKITT and Andrew Devil WKITE, Inc. Gener WKIZEW, and Iam Medikanter Developed WKIDS, Inc. Gener WKIZEW, and Iam Medikanter WKIZEW. Colin Hunts WKIME and Reg. Emmett WKIZE Colin Hunts WKIME and Reg. Emmett WKIXEW Colin Functions, assisted by Ken Hangraveve WKIZEW. John Ingham WKIME and Ref. Bogoes WKIZEW.

The Exposive reinbars were there in foote band werdless VIAAOW, the Feeder President, EAAOW (1997) and Feeder President, Children, Kaith Regel VOXXD, from Feed Tressure, Ken Sedon VAXAGO, Grainer Soot VAZZE and Jan Parsett for various literat, reducing Michael Crew VXXXI or IAAN Sed Annot VXXZES on Settlines, All Oberglatin VXXLC on Introdem and Sen Settliness (1997) and the Petal and Settliness (1997) and

The Rederal Councillors are of course elected by respective Divisions and when acting joinity thay are known as the Federal Council in Between Conventions the Executive carries on the work of the Institute, but only in line with the rules said down by the Federal Council The Executive is excited at each Federal Convention. The year the membrax wave selected as block that the property of the Prop

The Executive is assisted by many Fuderal Committees all of which render annuar reports the Federal Convention These Committees and Co-ordinators deal with IARU affars, Satestites, Intuder Watching, Repeasers Pub Lations, Education, Historical material Contests, OSL Buresu, Awards, 14/F/UAF, RTY and WICEN

Outside the formal hours of the Convention eight different working groups got down to work on individual groups of questions. As far as prac-

licable one member of each Ohlsional delegation was appointed to each working group thus enabling everyone to contribute his own expertise.

There is edition more than one in two outstanding questions to be resolved at a Convention bot this year was an exception. Firstly these was of course MADI and reVACO. To preparations. If the convention of the convention of the conlinear convention of the convention of the control of the convention of the convention of the control of the convention of the convention of the control of the convention of the convention of the control of the convention of the convention of the control of the convention of the convention of the control of the convention of the convention of the control of the

In Williamson brought with him the facility syllabars for MACOT and approved for a girls MAD. Departmental Standing Committee to resolve sensitive radia shifts: Its addressing the Committee and asswering questions for searly two hours he covered a vest range of interesting subjects from one proposed legislation to Cibera, from Ch. O and SA to morne speeds, from WARC TO be greater self-equilation and from examination procedures to reciprocal Sciencing.

The solviled accords for 1977, haring been serviced in secretaries with the requirements of the consideration of t

The costs of AR must be expected to increase by heason of initiation and many other factors too numerous to first here. AR was one item discussed in depth by a working party

The many annual reports were debited and votas of thanks expressed to the authors. The Executive Report is printed absentere in this issue. A great amount of time was devoted to LARU and WARC 79 stallar since these are of prime importance to the laters of the Ameticus Service everywhere, including Australia.

Do current attains the Novice Scenario conditions azamhetions and allied matters received careful attention in a working group as well as in formal debate. Almost as much discussion ensue on the question of reconsistent services to members, publicity and publicity material. One outcome of this Convention will be the smallability of video tapes in coloro for the use of Divisions, possibly on a resistoral basis:

Items -
VK4 will prepare for Executive a set of guidelines
to sld the implementation of a dynamic mem-

to aid the implementation of a dynamic membership recruiting drive by all Divisions.

Ways and means to be examined by an Executive

Working Group to suggest the provision of benefits and services for WIA members. Solicit further funds for WARC 79 from sources outside WIA.

Continue present work on posters as display material, assistance lines Divisions and members most welcome.

Leave seide temporarily any logo or badge re-

design.

Uniform policy for handling outwards QSL cards not approved.

Majority in favour of seeking Novice segment extension on 80m from 3255 to 3625 3thz, also or alternatively approval for Novices to as WICEM 80m net frequencies to join in WICEM approva Not approved were Novices on 2m, common band for all licensees, increase in power for Novices, 10m band repeaters.

Expansion of 2m FM activity by the use of 25 MHz channels — Fed Repeater Sub-Committee to propose the guidelines.

No recommendation was made about adopting a uniform numbering system for the 2m band at present because of the use of different systems already.

Fed. Recester Sub-Committee to propose suitable.

national repeater and simplex channels on 2m for ATV Space.
Seek approved in principle for 5m band repeaters.
VHFAC to work on 10m bascon licerating condi-

tions

Existing 70cm bendplan is satisfactory as far as repeater and simplex operation is concerned Encourage greater use of 70cm band.

Encourage greater use of 70cm band.
Approval be sought for linking of ameteur re-

Freposal to move the upper ATV channel down by 2 MHz was not approved.

Seek a permanent altocellon in TV Band 4 or 5 for an ATV experimental segment, also to seek an amsteer band at about 40cm in the event of losing the 50cm band or part of the 70cm band.

Form band.

Seek approval for one licence see for multi-mode facility.

Keep on pressing for no TV Channels 0 and 6A.

in same peographical area and no further allocations of these be made. Pressures still to continue for the return of 50 to 52 MHz segment to similarurs.

Seek ficence endorsements for higher CW speeds. Standard formula for life membership proposal was

withdrawn.

Regotists no AOCP multi-choice exems until agreed syllabus is adopted

Executive to report later upon compensation for loss of 27 MHz band.
Repeater Sub-Committee to continue work on re-

pealer conditions.

Negotiate for issuance of postage stamp promoting amateur radio.

PR agency or service angagement as a long term

PH agency or service angagement as a long term objective Recommended that for standardies on 18 channel CB equipment conversion to 28 MHz is on the

basis of a frequency shift of 1385 MHz.

Seek international agreement for RTTY frequencies on HF.

Expenses of Alternate Council ors attending fallurs

Federal Conventions be met by Executive.

The Federal Prasident and Mir P. A. Wolfenders
were selected as WIA delegate and satisfact
respectively at the IARU R3 Conference in
Bamphok in October.

The Fed President and Mr Owen attend the MZART June Conference.

These eclude most of the Agenda Items discussed but others were withdrawn because work on them was completed or was satisfactorily in progress at the time.

One of the more pleasant ceremonies to form part of feture Foderal Conferences is the handless enemer of the RO Trophy to the winning Division (if a change occurs). At this Convention Ian Hant formally handled over the aptendictly refurb ahed trophy to Ted Howe I the President of the ACT Division.

Omitting the usual declarations the following arthe 1977 year Sistement of Income and Expandture and Balance Sheet as al 31-12-1977 and the Report of the Executive for the year. The Auditor's Report is also reproduced.

A CHAPANY CHITAN BY QUARAN	In accordance with the Companies Act, 1961, the Facuctive state the following—  (a) The names of the Executives In office at the date of this report are—  Dr D A. Wardisse WICCADPW WICCADPW Bury, Hear Adm B. J. Lidys WICCDPA Bury, Hear Adm B. J. Lidys WICCADPW WW WICCADPW WICCADPW WICCADPW WICCADPW WICCADPW WICCADPW WICCADPW
	Act, 1961, the
	In office at the
Dr D A. Wardlaw	VK3ADW
Mr P A Wolfenden	VKJZPA
Surg. Rear Adm. S. J. Lloyd	VK3CDR
Mr K V Roget	VK3YQ
Mr K C. Seddon	VK3ACS
Mr G F Scott	VK3ZR

OC3ZR (b) The principal activity of the Wireless Institute of Australia is to 1 Represent generally the views of perso

connected with amateur radio in the Commonwealth of Australia, its territories and dependencies. 2 Promote the co-operation between the Divisions in the encouragement and development of amaleur radio 3. Safeguard the interests of the Divisions and

the members in relation to frequency allocations. rights and privileges 4 Promote the development, progress and ad-vancement of amateur radio in all matters in relation to smaleur radio in general (c) The surplus of income over expenditure for

the year ended 31st December, 1677, was \$10.857.00, compared with \$8,728.00 for 1976 There is no provision for income tax required as the Company is exempt under Section 103A(2) of the noome Tax Assessment Act

(d) During the year transfers from and to reserves and provisions were -1. Transfer of \$627.00 from Reserve Fund to General Funds

2 Provision for Amsteur Satellites. The provision formerly called Project Oscar and contri-butions to Project Australia (\$13.00) have been consolidated to a new Provision and an amount \$1,000.00 provided for the year, to total

\$1 613 00

3. Provision for Superannuation has been increased to \$2,250.00 (\$1,250.00). (e) The Executive have taken ressonable steps, before the Statement of Income and Expenditure and Balance Sheet were made out, to ascertain sotion had been taken in

writing off of bad debts and making of provision for doubtful debts and to cause all known bad debts to be written all and adequate provision to be made for doubtful debts. (f) At the date of this report the Executive are

refation

not aware of any circumstances which would rander the amount written off for bad debts, or the amount of the provision for doubtful debts, inedequate to any substantial extent (g) At the date of this report the Executive are

not aware of any circumstances which would render the values attributed to current assets in the accounts misleading

(h) At the date of this report no charges exist on the assets of the institute which has arisen since the end of the financial year and does not secure the fisbilities of any other person

(i) There does not exist any contingent liability which has arisen since the end of the financial

(j) No contingent fisbility or any other liability has become enforceable within the period of twelve months after the end of the financial year which in the opinion of the Executive will or many affect the ability of the institute to ment its obligations when they fall due.

(k) Since the end of the previous financial year (x) once the and of the previous institute year the Executive have not received or become an-titled to receive a benefit by reason of a contract made by the institute or a related corporation with the Executive or with firms of which they are members or with companies in which they have substantial financial Interests (i) The results of the Institute's operations du ing the financial year were in the opinion of the transaction or event of a material and unusual nature. There has not arisen in the interval between the end of the financial year and the date of the report any Item, transaction or event of a material and unusual neture likely in the pointon of the Executive, to affect substantially the results Members of he Everytive (Sed.) D. A. WARDLAW (Spd.) G. SCOTT

of the Institute's operations for the next succeed Ino financial year

STATEMENT OF INCOME AND EXPENDITURE FUR YEAR BURNEY ALL THE AMERICA 1977 1927 1978

Members' Subscription \*\*\* Interest Received 2,89 - Log Books Call Books 3.03 Magoubs 4 230 72.850 Amateur Radio (Note 1) \$20,455 12 020 Audit Fees 493 210

Bank Charges Convention Expenses 2.436 2,098 Catering and Enter-Minment 251 Committee Expenses 204 Depreciation 600 **EDP Expenses** 2.090 1.400 Electricity and Power 267 General Expenses 643 854 495 801 Membership Recruiting 1 246 1.404 Postage and Freight 2.025 1,814 Provision for Amateur Satallites 1,000 Project Australia 081 Rent and Rates 9 493 2,054 Repairs and Maintener 484 367 1,000

Accumulated Funds Brought Forward Add Transfer from Reserve Fund Accumulated Fends Carried

Superannustion

Not Surply:

Subscriptions

Incerts and Sundries

AH Sales

**Bed Debts** 

Stationery and Printing

Travelling Expenses

Salaries and Secretarial

MOTES TO AND POREMIS PART OF THE ACCOUNTS

AMATEUR RADIO elies 17

Honorarkume 3.610 Publishing, Printing and Distribution Costs Salaries 1,025

\$20,455 \$12,931

Australian Savings Bonds 976 Australian Resources Development Bank Sundry Debtors -- Less Provision 2.500 Stock on Hand - at Cost 83 5A0

Deduct-Correct Liabilities: Commonwealth Bank --General Appount Subdry Creditors Subscriptions in Advance Provision for Superanevation Provision for Ameteur Provision for Holldays and

1.000

0.030

99 90:

617 54,852 14,795 8,067 621

for the year ended on that date. 2. As required by the Companies Act 1981, the 926,979 \$14,796 report as follows in our colaton

1,771

21 647

1.610

808

1976 925 860 **\$24 203** 

2,274 2,105 1,139 15th February, 1976 1.257 1,348 WIRELESS INSTITUTE OF AUSTRALIA 30 530 25,160

3.540

6 DE:

24,475

3,185

1,018

50,985 26 001  Once again this year the Executive has continued to provide members with Federal news by seeans of WIANEWS and the Federal News Broadcast tapes 2. This of course meens a continuous report

on WIA Federal activities. 3. However I will attempt to consolidate most of the more important Items in this Annual Report

4. The Executive as elected at the lest Federal Convention were as follows Myself, David Wardlaw VK3ADW, as President and Chairman

Peter Wolfenden VK3ZPA as Executive Vice-Chairman and Chairman VHF/UHF Advisory Com-

BALANCE SHEET AS AT 31st DECEMBER, 1877

Pon Wilkinson

Award

Achievemen

WARC

IA Dri

non Ta Accumulated Funds

Special Funds - ITU

Represented by

Commonwealth Savines.

for Doubtful Debte

Long Service Leave Deposit VK4

Commonwealth Bank -- General

Non-Current Assets. Furniture and Fittings — at Cos

Less Provision for Depreciation

Cuttent Assets

Envestments

Account

Bosona Fund

1977 1975

\$96.970 \$14,785

> 9.521 8,653

9.604

4,663 3,985

\$9.893

1.053

12.645

9 950

600

2 753

Partner

500

\$51 167 \$28 060

99 R45 11,038

23,100 8,000

2.200 2.200

(2.000) re nno

6 984 4.080

78.603 46,099

1,897 1,b

60.300 47.671

29,133 19,811

\$51,157 128,040

25 182

4 600

11,325

3,424

1,613

2.753

300

AUDITORS' REPORT TO THE MEMBERS OF THE

is our opinion the attached accounts give a true and fair view of the state of the instrictor's affairs at 31st December, 1977, and of its surplus

The attached accounts are properly drawn up (1) so as to give a true and fair view of the

The accounting records and other records, and

the registers, required by the Act to be kept by the Company have been properly kept in eccordance with the provisions of that Act. HEBARD & GUNNING, Chartered Accountants

(8gd.) P W HERABO

with in the Accounts: and (2) in accordance with provisions of that Act

matters required by Section 182 to be deal-

WIRELESS INSTITUTE OF AUSTRALIA

Page 32 Amateur Radio July 1978

Keith Room VKSYQ, who is Hon. Treasurer and Chairman of Finance Sub-Committee Ken Seddon VK3ACS, who is Chairman of the

Federal Repeater Sub-Committee Graeme Scott VK3ZR, who is the Federal Educ tion. Co-ord nato

Bill Roper VK3ARZ Early In the year Bill Roper found t necessary to resign as business was frequently tening him out of Melbourne Fortunately, the transfer of urn Lloyd VK3CDR to Canberra was postponed for another year and

he was persuaded to re-join the Executive 6. I would like to commend my fellow Executive members on all the time and effort they put into the WIA

7 Bruce Bathols VK3LV as Managing Editor of Amateur Radio and Chairman of the Publications Committee has attended as many Executive maniloca as possible as it is expert at these be close laison between the magazine and the Executive 8. At this stage I would like to pay tribute to our Secretary/Manager Peter Dodd VK3CIF, for his loval and valuable assistance throughout the year He is a tireless worker for the Wila

9. Again we were able to make use of valuable from various experts who were able to attend Executive mest nos 10 Atlandances at Executive metings Dr D Wardlaw Mr P A Vrollenden Mr K. V Rogel Surg Rear-Admirel S Lloyd K C Seddon G F Scott Mr G Mr W. E . Roper Mr B Balhols Total number of meetings

11 The other Federal Officers were IARU RS Listen Officer Mr M J. Owen VK3KI Chairman WIA Project Australia Gp. In abayance Federal nituder Walch Co-ordinator Mr A. W. Chand at VK3LC

Historical Officer Mr G. M Hull VK3ZS. Matorical Office: Mr. G., M. Hull VRGAS.
Federa: Contest Manager Mr. K. Philips VKSAUG.
Federa: CSL Manager Mr. R. E. Jones VKSRJ.
Federa: Awards Manager, Mr. B. W. Austin VKSCA.
Oherman: Red. RYTV Committee, Mr. C. M. Wallier

VKSRVV Fed. W CEN Co-ordinator Brig. R. Roseblade VK1QJ

#### Fed EMC Co-ordinator in abayance

12 During August I was able to spend a week In West Austral a. As this is such a long trip i made a point of trying to see as many members as possible in addition to meetings in Parth I was able to get to Abery, traveling via Wagin, and back to Parth vs Busselon and Sunbury 13. Whilet In Albany I ettended a meeting of the Snuthern Flectronic Stroop It was interesting to see the western and of the UHF world records. 14. On my visits interstate I appreciated the keen Interest shown by members in amateur affairs, part ou arly WARD

15 In October attended the 25th Annual SW Convention of the NSW Division held in Griffith. The hospitality of the Zone was very much approclated and the organisers are to be con-gratulated. Again the opportunity to have person to person contact with many members was of great

16. During November I opened a seminar on Artennes presented by the Franksion and Mornington Peninsula Amateur Radio Club n Me bourne The attendance showed that this activity filled a well needed want and it is pleasing to see the dea has caught on in NSW

#### NEW ZEALAND 17 As the time since the last IARU Region 3

Conference grew onger and the preparation for WARC grew more riense it was increasingly apparent that close consultation between the WIA and the NZART was necessary 18 On the week-end of the 25th November, accompanied by IARJ Region 3 Director Michael

visited We Leater, NZ, where we Owen VK3KI. conferred with the President of the NZARY, Arthur Gedlroy ZL3HZ GPO Lission Officer Doug German ZLICO IARU Region 3 Director and IARU Lission Officer for NZART Tors C arkson ZL2AZ, his deputir Fred Johnson ZL2AMJ, and other councillors of the NZART Naturally WARC was discussed. The total of the New Zealand preparations for WARC 79 had not reached as advanced a stage as in Australia However there was a fruitful ax change of ideas. Extensive discussion took place on the IARU in particular with reference to its role

in the preparation for WARC 79. Also discussion took place as to the value of IARU representation on a national delegation The NZART has inaugurated the collection of funds for sending a delegate to WARC 79. 19. In a lengthy discussion on domestic mellers

of common concern it was interesting although not comforting to find that so many of our own problem areas are not unique. 20. Since returning I have passed on a gredeal of detailed information on the New Zealand

amateur exams to our Education Co-ordinator 21 Tight (moort restrictions for financial reasons prevented the development of the CB piracy problem in New Zealand that occurred in this country WARC 79 PREPARATIONS

22 Since the less annual report a preliminary draft of the frequency table was presented to the APG for consideration. As this was a praisminary the Apr draft its publication was restricted by the APG Chairman. However, the second draft will be available for publication shortly.

23. A lot has been made of the FCC Notices of Inquiry. However, it must be realised that the FCC is only dealing with the private user side of the preparation and the office of Yelecommunications policy is preparing plans on behalf of the Govenment users and that the two preparatory ments have to be combined to make up the Draft USA proposals

24. However more weight can be psf, for instance, on the draft proposate published by the Canadian DOC. It is interesting to see that Cenade has supported the new bends at 19 MHz and 24 MHz and also the proposal to start the 7 MHz.

#### THE AMATEUR SERVICE AND THE CCIR

25. The draft question on the Ameteur Radio Service has been submitted to Study Group 8 of

#### INTERNATIONAL

26. During the past year the President of the ARU, Noel Eston VESCJ, invited me to attend a IARU, Nost ng of his advisory group, sometimes know International Working Group. This group was to meet in Geneve at the same time as the Aeronautical WARC. As far as I was concerned there were three very good reasons for attending Ible meeting -

(a) It would enable me to perticipate in planning IARU policy and tactics for the period immedistely leading up to WARC 79, (b) It would enable me to observe a WARC in

operation also I would be able to investigate the accommodation and cost of living situation in Geneva, and (c) it would give me the opportunity of meeting

delegates who will also be in Gensus in 1979 on buball of other countries 27 I was not disappointed as personal dis cussions enabled the clarification of many com-

plex issues with the exchange of ideas. The role of the IADSI teams was discussed at length and also the importance of National amaleur delegates 28. A serkinar conducted by Merle Glunt VKDKN on ITU Conference procedure was invaluable as was sitting in the IARIT Chair at committee made ings as an official observer

29. The complexity of the ITU system is enormous and as this was only a small conference the congestion and activity at WARC 79 is mindboggling. One thing that stands out in Geneva, however, is the high cost of living

30. I found it of great value to have the opportunity of meeting delegates from many countries from all regions. There was a sprinkling of amateurs amonost the delegates as also in the ITU HQ itself I was honoured to have an informal meeting with the Deputy Secretary-General of ITU, Mr Dick Batler

31. The direct information I gained on the running of a WARC and contacts with the delegates from so many countries alone made the trip worth-32 Whits or London the RSGB was visited

Many ideas were gleaned which will be useful in WIA operations

33. On the return journey a visit was made to progress has been made in their preparation for WARC 79. They hope to have an anatour representative on the WARC delegation in Korea is also found a great awareness of WARC 79 and again like hope to have an amateur representative on the delegation

34 Ten farge parce's of technical magazines have been sent to the Indonesian Society and an informal discussion was held in Ma hourse between one of their V-ce-Presidents, Keklum Lumenia YSOBY and Peter Wolfenden TEACHER TOUR

35. There are many areas of concern to the WIA on this opneral subject. The frequency of the examinations, particularly in relationship to the Novice parl is one. We feel that two a year la insufficient and have made representations to effect. To date our suggest on has been rejected. However, in view of the recent announcements in the daily press with regard to staff increases, the matter will be pressed with increased vigour 36 Another area of grave concern is the lack

of provincial exemination centres, particularly in WA. Again it is the potential Novices who suffer the greatest disadvantage. The WIA has suggested several ways in which the problem could be overcome but with no results.

37 Since the introduction of the Novice level the Importance of establishing a sylabus has become very important Important because I essential that, firstly the candidates and secondly, the instructors know to what evel the various topics will be exemined and, thirdly for the exeminer himself not to stray for from estab-A vague syllabus is probably lished sizodards satisfactory when the lecturer is a so the examiner but not so when there are candidates spread throughout the country all tulored by different instructors

36. In this area during the preceding year there has been extensive sollivity by the WrIA Education Co-ordinator and his group not only but but siso in NSW and Queens and

39. A sludy guide based on the P and T Department's sylabus has been prepared and ansate authorisation by the P and T. Department Also a question bank has been prepared of questions at a Nov ce level

40 Apolher problem is the use of the Departs ment of the strict ITU morse character constitution and specing of the five words per minute Novice exam. It seems logics that the Novice should be alming towards the highest AOCP speed level and hence characters sent at 10 wp.m speed with accentuated after and word spacing would be the correct shing to do

41 As expected the introduction of CB eventuated with the subsequent withdrawal of the If metre amateur band Despite the many promises made prior to the Introduction of CB that the Service would be compensated for the loss of 11 metres, nothing has eventuated except for a very minor concession that Novices would be able to pay for a combined CB and Novice licence at usal the CB icence fee of \$25,00

42. This lack of compensation is very unsatisfactory as the smalleurs through the WIA soled in good faith Rest assured the Executive has not lost sight of

this slight and will not set the malter rest are still many areas in which the Government could compensate us for our loss without causing any conflict with other radio services and it is hard to understand why no act on has taxen place 43. Submiss on was presented to the P and T Department on behalf of the WIA on matters concurring the new Act which on present indications, appear to be no nearer to enactivent than it was a year ago

The submission took into account the nature of the Ameteur Service and enalysed the use of both receivers and transmitters. The use of receivers

is also governed under the Broadcasting and Tele-vision Act. The point was made that we hoped that in structuring new legislation care is taken to ensure that a prohibition is sufficiently fegitimate to avoid unreasonable constraints on

VISIT TO MINISTER

44 Lasi April the then Minister for P. and T. Mr E Robinson, received a deputation from the WIA which included the Federal President, MSW Dyvisional President and the present President of the ACT Division

The main reason for this meeting was to put the WIA's position with regard to the impending setroduction of CB. The point was strongly made that the proposed CB service and the Ameteur Radio Service are very different in a number of vital ways. The opportunity was taken to raise the matter of representation on the Australian dategation to WARC 79. The proposal received a favourable hearing

45 Over the last year a backlog had developed of matters raised with the P & T Department by the WIA on bahalf of the Ameteur Service. Amateurs were urged to contact their MPs and compan about the apparent lack of action. One area of particular concern is the unlawful use of transmillers (easily and apparently "lawfully" ob-tained on amateur bands. We also note that the emateur bands are not the only areas of intrusion.

JOINT COMMITTEE 48 It has been proposed that a committee of Federal WIA and Central Office RFMD be set up to Italiae on amateur matters and that this commiltee could start by trying to straighten out some of the unresolved questions posed over the issi

poveral years HANDBOOK

The P and T Department has indicated that they again wish to proceed with the revision of the Handbook for Arieteur Operators. On a pre-vous occasion some years ago when the Dapari-ment proposed a revision a great deal of material was prepared and lorwarded to them; unfortunately, nothing further was heard in the meantime, the Novice I cence had been introduced. This of course

requires many alterations in the Handbook. Geoff Taylor VKSTY has produced a working draft of suggested alterations.

48. There are of course two major factors which must not be last eight of when a revision of the Handbook is considered -(a) the new Act may easily require the siteration

some of the requistions governing the Amsteur Service, and (b) the general WARC of the ITU to be held in 1978 may alter some of the radio regulations of the ITU which would have to be reflected

on the Australian regulations.

the resolving the Australian Radio Regulations under the WT Act II is apparent that they are out of date. At the very core of the situation is the definition of Amataur Radio being much narrower than that given in ITU RRITS which is a "Service of self-trained intercommendation and

technical investigations carried on by Amateurs, that is, duty authorised persons interested in radio techniques solely with a personal aim without pecuniary interest". The Australian regulations are planned with considerable emphasis on the experiments side whoreas the ITU has a separate definition for an

experimental station and specifically states this deficition does not include smalleur stations it is also in the best interests of all to have the minimum of restrictive regulations consistent with good nousekeeping relying on the self-regulatory ability of the service CALL BOOK

The 1977 Call Book, the Frat of the new contract, was printed from WIA EDP records. Call agn information is now on computer file which can easily be updated As far as WIA members are concerned this information is as up to date as the membership records, however, with nonmembers we are dependent on the departmental records with which we are provided and which

contain numerous errors and omissions. Frenkly the Call Book was a little disappointing but we must concede that it was a first time for the method of production. Alterations have been made to the EDP programme already which will Improve the formst

DUR MAGAZINE "AMATEUR RADIO"

52 Again the Managing Editor, Bruce Bathols VKSUV, and the Publications Committee are to be congresulated on the high standard they have maintained. Despite the problems caused by the Victorian power strike they produced the bumper December Issue "Amateur Radio" - Australia's Window on the World". The production of this issue was the result of discussions at the 1977 Federal Convention and the decision to investigate the production of a Year Book of Amsteur Radio. On assessment of our resources it was decided that a separate publication would be too much to be undertaken by the Publications Committee. As enlarged December Issue was printed with extra copies for sale to the public.

TABLE 1 (Previous year in brackets)

LOG BOOK

53. The Victorian D.vis on found Itself unable to go shead with further printing of the WIA Log Book This was a facet of WIA publishing left with them at the time the Federal body took over the publishing of "Ameteur Radio" and the Call Book The declaion was made to undertake this work and 1000 were printed for distribution through 'MAG-PURS'

54. "Magpubs" continues to be a service to the members, while providing a small profit for both the Federal Office and the Divisions. In view of the savings provided it is a wonder that more members do not make use of this service Possibly the absence of specific advertising may have something to do with this

		otal	WIA lice members of call si	and 2nd	% me to t			or WIA		3	rotsi WIA ambers
VIC1	187	(144)	103	(79)	55	(00)	37	(31)	1	140	(110)
VIC2	2935	(2383)	1199	(978)	41	(48)	241	(287)		1440	(1245)
VICS	2407	(2219)	1200	[1078)	50	(49)	414	[324]		1514	(1411)
VK4	1018	(851)	808	(503)	80	(30)	150	[154]		786	(657)
VK5/8	990	(907)	580	(499)	56	(55)	213	(180)		773	(679
VK6	542	(581)	342	(288)	53	(50)	94	(80)		436	1388
VK7	275	(248)	161	(154)	59	(63)	67	(67)		228	(221)
Other	20	(10)	_	_	_		_	_		_	_
	8483	(8919)	4171	(3588)	40	(50)	1216 = 23%	(1103) of all	members	5387	(4691)

TABLE 2. Distribution of Grades of Licensees - Pull Calls (= 60% of all calls)

	Total	Lioensed	% of total	Members of WIA	of total Div. Pull calls	of total Full call Licensess
VICI	138	(114)	(3)	75	54	1
VK2	1788	(1653)	(35)	810	45	18
VIC3	1421	(1378)	(200)	817	57	18
VIC4	585	(583)	(11)	402	69	
VK5/8	897	(586)	(12)	377	63	7
VKS	423	(414)	(8)	255	61	8
VK7	168	(164)	(3)	96	58	2
	5117	(4882)	-	2655 5	5%	

TABLE 3. Distribution of Grades of Licensees - Limited Calls (= 30% of all calls)

					Percentagee			
		Total	Ucensed	Members of WIA	of total Div. ((mited calls	of total limited licensess		
_	V9C1	35	(27)	21	64	1		
	VIC2	755	(663)	273	36	11		
	VICS	831	(788)	314	38	13		
	V164	\$17	(286)	140	44	8		
	VK5/8	297	(285)	137	46	8		
	V108	182	(139)	52	32	2		
	VIC7	85	(80)	49	58	2		
		2480	(2267)	986	=40			

TABLE 4. Distribution of Grades of Licensees — Novice Calls (= 10% of all calls)

		Total I	Joensed	Members of WIA	of total Div. Novice calls	of lotal Novice Noensess	
_	VK1	18	(3)	7	44	t	_
	VKZ	395	(85)	115	29	13	
	VIC3	155	(53)	89	45	8	
	V964	116	(13)	84	55	6	
	VK5/8	105	(36)	46	44	5	
	VICE	57	(51)	34	60	4	
	V107	22	(2)	14	84	2	
	4,63	866	(187)	350	=.40		

55. During the year Monash University informed us that it would be advisable for us to change our program from the computer we were presently using for a number of very valid reasons. In view of this the Executive look the opportunity of rvestigating a terations it seemed that we may have been able to use the computer of a mailing service. Data Mail However, at the last moment the Company and called that they were no longer pterested Bocause of this it was decided to convert to the Monesh on versity's new computer and during this conversion steps have been taken to tidy up the programme in many areas. As well the accounting package has not been implemented

56. While in Landon I had the apportunity of watching the RSGB's In-house computer in action On close questioning it was obvious that due to The small ress of our membership the ownership or lessing of our own computer would increase our EDP coals excess vely Further investigations proved this but it is certainly worth keeping an eve on fulure developments in the small computer

#### THE MAILING SERVICE

57 There have been some problems in this area mainly concerned with the insertion of material into "AR" destined for specific Divisions. Much ma nty needed improvements have taken place but alternatives are being investigated

#### RECRUITING AND PUBLICITY

58 (ARC Region 3 has received from the ARRL three colour films on Amateur Radio. The WIA has copied these films on to videotapes and a ready very good use of them has been made in NSW and Victoria

59. As a result of the NSW Division's request for publicity material it was apparent to the Fractive that in addition to hand-outs some colourful posters depicting various aspects of amateur radio would be very desirable Several very suitable designs have been prepared for Executive and Institute approval and it is hoped to have a selection available in the near future This would be the first step in preparing "Packaged displays" for loan to exhibitors.

50. An advertisement was placed in "CB Action" and it is obvious that there are many CBers who wish to know more about Amateur Redio. I anticiosts that this Convention will spend some time in discussing this aspect of the WIA's activity

61 Just prior to writing this report members of the Executive were involved in presenting a segment on Amateur Radio for the Channel show "The week has seven days"

62 A number of developments have taken place uring the last year, all of which have been covered by the Federal Repeater Sub-Committee One matter finalised was the additional channels for 2 metre FM Reposters. Another matter which now appears to be nearing linelisation after protracted negotiations is the repeater licensing conosed by the Radio Frequency Manage ment Division. AMATEUR SATELLITES

63 During the year Bob Arnold VK3ZBB took over as Publicity Officer for the Project Australia Group to enable David Hull VK3ZDH to concentrate on his sob of Satellite control. The Isunching of Amest Oscar D, AO8, in March

has provided a satisfactory replacement for AOS which exceeded its dealon life by many times.

#### MQ BUILDING IN CANBERRA

64. The proposal as outlined at the last Conwention was thought by a majority of Divisions to be premeture particularly coming at a time when our major affords have been centred on WARC 79 We were informed that the other National Organizations interested in the site were able to make a firm offer and thus that perticular site was no longer available. However, if does not mean all the work has been wasted as the NCDC w.ill no doubt make further sites available in the future 65. Earlier this month I had the opportunity of discussing some smalleur matters with the present Minister, Mr Staley. He invited me to have further discussions with him in the near future

#### BON WILKINSON AWARD 55 Our thanks to Mrs. Mary Wilkinson for her magnificent dons' on which has made this award

possible The conditions of the award wars drawn up in close co-operation with her after Peter Wolfendon and I visited her in Geelang MORE WORLD RECORDS

67. It is plessing to see that Australia now hold the world records for the 70, 23 and 13 cm bands

#### MEMBERSHIP STATISTICS

88. These are compiled, with adjustments, from the EDP data input from mid-December 1977 and P and T Department statistics as at 31/2/1977 69, in conclusion I must ment on the anonmous volume of work handled during the year. There was scarcely any facet of ameter activity not thoroughly investigated and discussed during the course of the year fed by much useful information direct from interested members. Thank you D. A. WARDLAW, Federal President

## REMEMBRANCE DAY CONTEST 1978—RULES A perpetual trophy is awarded annual competition between Divisions of the

Wireless Institute of Australia. It is inscribed with the names of those who made the supreme secrifice and so perpetuales their memory throughout Amaleur Redio in Australia. The name of the winning Division each

rear is also inscribed on the trophy and, in addition, the winning Division will receive a switchly inscribed certificate.

#### Amateurs in each VK call area will endeavour to

ontact other amateurs.--1 in other VK call areas, P29, and Zi, on all bands 1.8 through 30 MHz.

In any VK call area (including their own), P29, and ZL on authorised bands shove 52 MHz and as is indicated in rule 5. CONTROL DATE 0800 hours GMT on Salurday 12th August 1978,

#### to 0759 hours GMT on Sunday 13th August, 1978.

At smateur stallors are requested to observe 15 miles sience before the commencement of the contest or Saturday afternoon An appropriate broadcast wilk be relayed from all Divisional stations during this period. pitt ge There shall be 4 sections to the Contest -

- in Transmitting Phone (b) Transmitting CW
- (c) Transmitting Open (d) Receiving Open
- 2 All Australian Amateurs (VK cs I signs) may enter the Contest whether their stations are fixed, portable or mobile Members and nonmembers of the Wireless Institute of Australia are elig b.e for awards
- 3 Amateurs may use these modes.-(et Phone (b) CW
- (c) RTTY
- (d) TV (fast and slow scan)
  - However, only one entry may be submitted for sections (a) to (c) in rule 1. An open log

- is one where points are claimed for more than one mode, AM, SSB and FM are proposed as one mode, i.e. Phone 4. Cross mode operation is permitted but both
- stations may only claim points as for a phone/ phone contact. Cross band operation is not permitted excepting via a satellite repeater 5 SCORING Contacts
- (a) On the 3.5, 7 and 14 MHz bands a station
  - in another cell area may be contacted once on each band using each mode That is, you may work the same station on each of these bands on Phone, CW, SSTV and RTTY (b) On the 1.8, 21 and 26 MHz bands, a station in another call area may be con-
- tacted twice on each band using each mode provided that not less than 12 hours has elapsed since the previous contact or that hand using that mode (c) Between 1600 hours GMT and 2100 hours
- GMT on Saturday, Intra-call area contacts may be made on the 1.8, 7, 21 and 28 MHz bands once for each mode on each band.
- (d) Between 0300 hours GMT and 9759 hours GMT on Sunday, intra-call area contacts may be made on 1.8, 21 and 28 MHz hands once for each mode on each hand
- (a) On the bands 52 MHz and above. The some station at any call area may be worked using any of the modes listed in rule 3 at intervals of not less than two hours since the previous same band/mode

- contact However, the same station may be contacted repeatedly via sate ite not more than once by each mode on each orbit (f) All CW/CW, SSTV/SSTV and RTTY/RTTY
- contacts count double. Note rule 4 re 6. Multi-operator stations are not permitted (except as in rule 7), a though log keepers
- are allowed Only the I censed operator a allowed to make a contact under his/her own call sign. Should two or more licensed operators wish to operate any particular station each will be considered as a contestant and must subtent a log under his own call sian 7 Club stations may be operated by more than
- one operator but only one operator may operate at any one time, i.e. no multi-transmissions All operators must sign the declara-8. Entrants must operate within the terms of
- their Lospons
- CYPHERS Before points may be claimed for a contact, serial numbers must be exchanged and acknowledged The sorial number of 5 or 6 figures will be made up of the BS (phone) or RST (CW) reports plus 3 figures that will be incremented by one for each successive
- contact If any contestant reaches 969, he will start again with 001 10 ENTRIES Must be set out as shown in the example, using one side of the paper only and standard WIA log sheets if possible Entries

must be disarly marked "Remembrance Day musi oo cistiy marked "Remembrance Day Contest on the envelope, and must reach the Federal Contest Manager, WIA, c/o Orange and District Amateur Rad o Society, Box 1865. Orange, NS-W, 2800, in time for opening on Friday 15th Saptember, 1878. Early submission of look will be appreciated

11 TERRESTR AL REPEATERS terresiria repeaters are not permitted for scoring purposes. However, contacts may be Arranged Parauch the renester and if successful on another frequency that contact counts for scoring purposes

12 BOOTAR & OPERATION Log scores operators located outside their own call area wI be credited to that call area in which operation takes place eg VKSXY/2 His score as added to the VK2 scores

13. All one shall be set out as in the example shown, and r addition MUST carry a front sheel thowing the following information --Name

Address Cal stan Claimed acore

Number of contacts Modes used

Dec eret on "I harsby certify that I have n accordance with the rules and operated spirit of the contest Sioned

All contacts made during the contest must be shown in the log submitted if an invalid confact is made, if must be shown but no score clamed Entrants in the "Open" section must show the various mode contacts in numerical, is chronological order

14 The Federa Cortest Manager has the right to disqualify any entrant who, during the conteel has not changed the reculations or has consistently departed from the accepted code of operating athics The Federal Contest Manager also has the right to disallow any

legible incompale or ncorrectly set out logs. 15. The rung of the Federal Contest Manager of the W.A. a fire and no disputes will be erlared into.

> CW 21.2A2

AWARDS (Sections a. b. c) Certificates will be awarded to the ton scoring Certificates will be awarded to the top scoring stations in sections (a) to (c) of sule 1, in each call area and will include the top scorer in each

cast area, and with increase the top scotter in each saction of each call area operating exclusively on 52 MHz and above. Each VK. ZI, and P29 call area will count as separate areas for awards. Thore will not be an outright winner Further certificates may be issued at the discretion of the Endard Contest Manager

The Division to which the Remembrance Day Troofw will be awarded shall be determined by the tollowing formula -

Average of top 6 logs plus (1000 times total points score from all entrants from call area in sections a b and c of rule 1 divided by the total call area licences).

VKO acores are added to VX7 and VX8 to YKS. Scores by YKS stations are added to the mainland call area geographically nearest. Scores claimed by Zt, and P28 stations are not included in the scores of any VK call area.

Acceptable logs for all sections shall show at least 5 valid contacts. The Trentry shall be forwarded to the winning Division in its container and be held by that Division for the specified period

RECEIVING SECTION (Section d) This section is open to all Short Wave Listeners Australia Renur New Culesa and Many Zealand, but no active transmitting station may

2 Contest Ilmes and logging of stations on each band are as for transmitting. 3. All logs shall be set out as in the example Il is not permissible to log a station calling he ranneded

Note the times and conditions set out in rule 5 (transmitting). 5. Club stations may enter this section. All operators must seen the declaration

AWARDS (Section d) Certificates will be awarded to the highest scorers in each cell area. Further certificates may be swarded at the discretion of the Federal Contest Monager

BS(T) mo'd

VICADII

MKEKI

VIXEFI

WCSN72

Entete

#### EXAMPLE OF TRANSMITTING LOG Band

28

0618

0818

1820

EXAMPLE (	F RECEIVING	LOG	VICTORIAN SWL				
Date/t me GMT 12/8/78	Band MHz	Mode	Callsign heard	RS(T) sent	Station called	Points	

58002

57008

58077

550004

Mode Calision worked BSIT) eant

VK022

VKSNAA

#### SCORING TABLE FOR PHONE CONTACTS -- ALL CH/CW, SETY and STTY CONTACTS COURT DOUBLE (VIK) To

From	0	1	2	3	4	8	6	7	a		P29	ZL
VKO	_	6	6	6	6	6	- 6	6	8	6		- 6
VK1	5	_	2	3	3	3	4	3	4	5	5	3
VK2	В	2	_	2	2	3	4	3	4	5	5	3
VK3	6	3	2	_	3	2	4	2	5	5	8	3
VK4	8	3	2	3	-	3	5	5	2	4	2	4
VK5	8	3	3	2	3	-	2	3	3	5	5	4
VK6	8	4	4	4	5	2	_	3	2	5	5	5
VK7	6	3	3	2	5	3	3		s	5		3
VKE	8	4	4	5	2	3	2	S	_	2	2	4
VKS		5	5	5	- 4	5	5	5	2	_	5	4
P29	6	5	5	5	2	5	5	5	2	5		4

All intra-call area contacts on 52 MHz and above, or as indicated in Rules 5 (c), (d) and (e), are worth one pole

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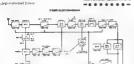
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YO 100 senes Montanti use
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FP 30 301 senes 20Ame PS
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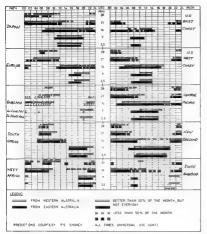
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## IONOSPHERIC PREDICTIONS

Len Poynter VK3ZGP/NAC



The good haws — If you haven't already heard — is that the new cycle, cycle 21, will peak concern derably higher than previously anticipated. The latest figures from Zurch soggest that August 1975 will see the amorbit numm number reach around 150, this beling somewhat midwiy behiveen the peak of 1955 (201) and 1956 (1910 ft).

Those who have been using the vernous HF bands will have noted the effects (sing before you have read this indeed hose on 28 and 21 MHz have been having a bell and the 14 MHz bend is often bursting at 11s search 28 MHz has virtually received the levels of the sery 1860s with world-verice UX benn't available for form periods predominantly

being available for long periods predominantly over weekends. Corresponding solar flux eyels have peaked close to the 200 mark in April and May The May mean settling around the 145 much higher than usrien

Surspol numbers have risen considerably since Aspuss 1977 and in this year have shown 1778 — 493, 2/78 — 89.8 (1-7b all over 100, 138 en 4th), 3/78 — 73.5 (103 on 4th), 4/76 — 94.7 (8-12 00 p.ts, 18-26 (00 p.lxs).

The running smoothed means for 7/77 — 28.8.

8/77 = 33.00, 9/77 = 35.5, 10/77 = 44.6 For Dr. Forward predictions at May 1, 1978, from Dr. Waldmeier are July 84 August 89, September 94, October 99, equating approximately the period 1967-58. Alvone remember?

Solar flare scrivity has been moderate but the event on April 30th was the largest observed for

some four years and produced some interesting DX about that time We are now in the winter period and of course the band conditions assume different stitutes. As we approach August-September some interesting conditions should start to show

Commencing in August the 6m enthusiasts should begin to take notice of 10m enthusiasts should begin to take notice of 10m enthusiasts for it will be along the periods of probable 10m openings that there are distinct possibilities of long haps for openings taking place. When I receive notice of the possibility it will make special note in the charls.

Nowever, some detailed recording of solar ferrestrial events should be alterepted to anticipate periods of higher than normal conditions. I still maintain that the Solar Filtz A Indices glywan of the Solar Filtz A Indices glywan chariet to deserve relationships. A watchful ear or chariet to deserve relationships. A watchful ear or more observed types taking advantage of abnormal conditions reading to Inter-Facility. Ox on 95 MHz: Who will be the first m Southern Australia to make it to WIVIC or even South America.

At this late time I would like to make reference to a report that I mentioned some time back, of a theory for predicting the peak of the oncoming cycle-based on the "regression of recurrent generalisation" and the peak of the predict the senspot maximum of the forthcoming cycle.

The method was devised by A. I. Ohl, a Soviet scientist. H. M. Sargent III. Space. Environment Services Centre, Boulder, Colorado modified the Charleston March 1997. The Colorado modified of the Charleston March 1997. The Charleston Marc

Compared to any prior known methods the new method would be by far a maior breakthrough in predicting sunspot maximum lavels when accuracy and other advantages are considered.

The sexet mechanism between the prior cycle recurrent geomeganic between the succeeding cycle sussept maximum is not clear However, it is likely that one is directly related to the other in solar physics, whereby it is even possible that a new definition of a solar cycle may have to be exable shed Con acture may place may have to be exable shed Con acture may place may have to be exable shed Con acture may place may have to be exable shed Con acture may place may have to be exable shed Con acture may place to be exabled. The control of a solar cycle subject to recurrent geomeganic of a lurbances may be the or heplaces of the succeeding cycle sunspire rag ons.

Monthly smoothed predicted numbers using the modified Ohl system for cycle 21

10

19 19

19

19

19

	Jan.	Feb	Mar.	Apr.	May	June
978	58 6	84.4	59.5	75.0	90.6	85.1
979	110.8	114.6	118.8	120.3	124 5	127 8
980	151 5	153.4	151 4	152 D	153.6	152.2
981	139.0	135 8	133 7	134 8	127 8	126.2
	Jul.	Aug.	Sept	Oct.	Nov	Dec
978	89.5	93.6	97 6	99.7	193.3	107 1
979	131 1	138.1	138.2	140.8	145.0	148 1
980	150.9	149.8	146.2	145 4	143 7	141 2
981	126.2	125.6	123 4	122 3	121.2	120.6
15	these	predictions	hold	frue. cv	cle 21 v	v I be

The state production and the state of the st

Predicted smoothed SS max. for cycle 21-153 6 Date of arrival — early 1980

Prediction of smooth SS level maximum by method ratios — 158.0 (This method takes the averaged smoothed odd

cycle peaks divided by the average smoothed ever cycle peaks divided by the average smoothed ever cycle peaks i-mes the peak of cycle 20 |

Accuracy of the Ohl/Sargert method as lested with observed data from cycle 20 and compared with observed data from cycle 20 and compared cycle 20 and c

to cycle 20 surspot peak level eque's nearly 95 per cent Twelve hour periods with geomagnetic "A" indices of 100 or more expected in the next 10

dices of two or more appreciate in the next to years equals \$1 periods (an "A" lodax of over \$0 indicates a major geomegnetic storm)

Well there is food for inought. The original winfar of the article list that the amateur community should be made aware of a highly accurate pre-

diction that may well allect our use of the radio spectrum and also our daily lives and destiny.

I guess we can only observe these possible effects and perhaps enjoy what promises to be bumper crops of DX Particularly the VMF.

effects and perhaps enjoy what promises to bumper crops of DX Particularly the VH frate-naty
Good luck good DX

VK3ZGP, NAC

Acknowledgements Swiss Faderal Observatory Zurich, M. Watdmeier Radio Communication May 1958, viz., O. Okloshen WRRX (RN Report)

# HEARD ANY GOOD "RUMOURS" LATELY? TELL A.R. ABOUT THEM

## LETTERS TO

## THE EDITOR

Any opinion expressed under this her is the individual opinion of the writer ar does not necessarily coincide with that of the publishers.

12/5/78 The Editor. Dear Sir.

With reference to the gentleman in AR (May 1978) from the electronics company

"Sir", you are not the cheapest nor do you appear to be, in the very issue you get stuck iclo me.

Your FRG7 receiver is almost the dearest and In the casue the race ver varies in price from \$300 to \$350 A phone call to the \$300 man will tell you he

makes a comfortable profit at that price. makes a comfortable profit at that price. Turn off a few of your lights, make, and pass it a one to your customers. There is one letter in print supporting me and 35 here at home if you'd like to see tham And they are the ones who took the time to write. Your FL200Bs were advertised at the \$578 price after you got the agency and then mysseriously dropped Maybe you didn't sail env2 The tone of the letters to me suggests that,

whilet a man is free to make an honest profit competition should force prices down if you wish to survive

As for our prices being as low as the U.S. What can you buy a U.S. dollar for or for that matter what price the Japanese Yen? I might suggest that when an FL2100B was \$400 to buy here it was \$325 air-freighted from

Hong Kong, and you could buy Y180,000 for \$A400 the linear is \$575 and you buy Y100,000 for \$A400 So the poor hap see Ham pays 150,000 Yen for a linear which costs you less than 100,000 lended I challenge you to supply details of your landed

cost and suggest that If you are paying what you say you are then you'd better buy from Hong Kong, because they are cheaper there than Japan. How long are you going to accept the load of wallop that's being fed to you on the subject? This is my final say. Let the buyer beware you've only got yourse f to blame if you get taken

To those who wrote me, thanks, I hope I was of some help but I find even one of the recommended businesses is a rip-off merchant, so watch out Yours faithfully,

Sleve Gregory VK3OT The Editor.

#### Dear Sir.

According to my calculations the GSRV with 100 feet top and 32.5 feet of open wire feeder has the following resonances — 2.83, 8.51, 14.17, 19.83 and 25.43 MMz. To be resonant on the present bands the feeders should be 16, 49, 32.5, 27 and 22 feel respectively Perhaps the WARC 79 confarence could go for some set of bands related according to the odd half wave lengths. If the feaders are made 48 feat long the antenna is resonant on 2.36, 7.08, 11.81, 16.53 and 21.27 MHz. The GSRV would be a most acceptable device if

the bands were related this way Yours aincerely .t Kitchia VIORTII

H R. Miller VK3AYO. 27 Medies Road Glen Wayerley.

#### The Editor Deer Sir

I refer to your letter on page 37 of April 1978 AR headed DX column. I have read the letter several lines and have come to the conclusion it would have been more correctly titled "Anti-DX column. Whereas I defend the right of the writer to do what he enjoya most on the bands, please don't decry those of us who enjoy the setisfaction of getting a call and card from a rare BX station (near or distant) from the middle of a "dogpile" with 150W input using only a vertical or dipole on CW or SSB. I for one find great satisfaction in knowing that my operating technique, and sometimes patience, has won through over the 79 ft. beams and I kW linear amplifiors

are necessarily short for the very reason that the station is rare DX and many stations wish to work him. The distant station may not speak much, or any, English, this also makes a relatively short contect necessary I enjoy a chat myself and quile often "Ragchew", but on the other hand, I also would find it a "Crashing Bore" if I was using Phone instead of CW.

Lastly, I quote from the letter "I never, or only Lastly, I quote from the letter "I never, or only very sarely, say that I will GSL", but flow often does he say he won't GSL? There must be a lot of disappointed "Certificate Hunters" walling for a card. Printed on a GSL card I received from

KSXR are these words "The final courtesy of a QSO is a QSL', that, I think, sums up my feelings exactly and If I have pricked anyone's conscience re OSLs - good - 1 intended to 73 and "good DX"

Dusty. 45 Lahona Avenue.

Fast Bertleich 3165

#### The Editor. Dear Sir, I am a regular Setener to the slow morse trans-

mission put out by VK28WI and VK58WI but has been gatting harder and harder to copy if because of local (VK3) amateurs transmitting close to the frequency of the slow morse transmission and as one of the amateurs said that the people who listen on very broad receivers find it very hard to copy the morse, and the only way I can get practice is by listening to tapes which have been used over and over before. Yours felthfully, Warren Brown

Boy 40441 DOM: 10777 22-5-78

19th May, 1976

#### The Editor. Dear Sir.

I enclose a copy of a letter sent to Senator Robertson, Kilgariff, and Mr Calder, M.H.R. Several letters of protest were given to Senator Robertson, who, I believe, will pursue the matter In Canberra this week.

T J Connell VK8CO

Senator E. A. Robertson,

#### Darwin, N.T 5790. Deer Sir.

As a licensed smaleur, I am writing concerning a situation which I consider to be preposterous I am referring to the advertising and sale of amateur equipment to uniformed persons, the majority of which are CB operators.

The two instances which prompt me to write ere. firstly, the incident in Darwin this year of the sale of 15 Kenswood TS-820 transceivers to unlicensed persons. It is obvious that the majority of businessmen selling (ransmitting equipment are concerned more with the quick quid and not of the consoquences. This I can understand. What is deployable is that the situation exists where they can do it. Surely a simple solution is to limit the sale to licensed people capable of producing that licence and also to have the seller supply the name and address of the purchaser to the Radio Branch. This method is by no means perfect but is far better than nothing

The second incident is the advertising of Illegal equipment and the bilatant advocacy to piracy The contraventions are

- 1 Beams are not legal nor is working DX. 2. Linear amplifiers to boost signals.
- Both these items are obviously intended for use with CS in this letter I shall restrict my concern to Amateur Radio and not deal with the possible

Some of the so-celled "hullo/goodbye" QSOs Radio inspectors appear to have their hands full with maintaining a clear commercial service and eliminating the worst of the CBers. Who will look after our frequencies? We have no onwer to

equipment (easily available) and amateur fre-quencies. It would be nalve to suggest that this The advertising of the 10 metre (28 MHz Amateur

consequences to commercial services. I am con-cerned with the Citizens' Bend because as this frequency is rendered unuseable CBers Inevitably

turn to the next easiest thing which is ameteur

will not occur or is occurring

f) transceiver as having "lots of channels" in-ferring that this would be better than the crowded 27 MHz is absolutely actorning Why not advertise skeleton keys for burglars or that X brand of explosive has been tested on Y brand of safe and found to be effective. I feel t amounts to the same thing

It is blatently obvious to the outsider that some centionen, whether they be in P and T, or the Government, care nothing shout the whole situs-tion or its consequences, it appears to me that next elections whatever, different portfolios will be handed out and it will become someone else's problem I sincerely hope that someone else see the light soon Yours faithfully, T J Connell VK8CO

18th May, 1978

#### The Editor, Deer Str.

One of the Important functions of the Amateur Service SHOULD BE to present its Image to the general public. One method could be to arrange displays of equipment used in Amateur Radio communications, publicity material such as pictures of memicisions, publicity insterial auch as pictures of Amateur activities, etc. It is quite difficult — and expensive — to obtain photographs for display purposes. Even in "Amateur Radio" we find cover photographs that appeal to the informed Amateur Operator but would hardly attract attantion from "outsider" I suggest, therefore, that spec at thought should

be given to the PR aspects, We need, I submit, photographs of Novice Stations and operators of the expensive sophisticated types that have appeared as "typical" Novice stations, but simple, preferably HOME-MADS stations that will ampile, preversory nome-mode stations that will not frighten the possible devotes by their obviously high price tags. What about some gent rebricated from old TV chassis and components. There are still SOME radio enthus sits who are I mited by financial considerations and will have to improvise and construct Also, would it be possible to introduce a PR series of photographs that could be bought in sale

by Redio Clubs and by individuals for purposes? Even large wall charts of PR for display could have considerable value in our efforts to achieve "Amateur Radio for the Masses" | Anyway, | presume that the Federal With has some PR Officer who could advise on the best types of material to prepare. However, I think that Radio Clubs might make good use of prepared PR "kits" for display in Club premises and in PR situations "in the outside world" Yours faithfully

#### Rex C Black VK2YA. Education Officer WIA NSW Education Service

(This was one of a saries of questions dis-cussed at the 1976 Federal Convention in con-siderable detail. Executive even new are preparing display kits. Additional poster designs would be very melcome.—Ed.)

#### The Editor Dear Sir.

At the recent Federal Convention I tearned that an earlier proposal to obtain an Amateur Low Fre-quency Band is now almost dead Such a band would presumably be between 180 kHz and 190 this Many emeteurs may not appreciate the In-teresting technology and challenging communications paths that would result from the use of such a band

In America, from where the main impelus for such a proposal must come the objections to amateurs using such a band have been that it could interfere with the European of broadcast band, and the possibility of interference to various carriers used on high voltage lines by power supply authorities.

Both of these objections are probably unjustified, however I would like to suggest another approach to the problem.

Delieve the band that was asked for was far too large. You might say the band asked for was only a few tons of inflowers wide bott, in a part of the process of the process

Some say you should ask for more spectrum than you need, at least you might get some. Rubblah! If you ask for something you can't justly "dicals are bound to say "no".

The band that should have been saled for would be only a few alst wells. What could not only a few alst wells. What could not only a few alst wells. A few and services are easy to softwer at such frequencies own with a crystal set. With CW or NBFSK (sele-graphy systems price could fit at least four stationaries) and the self-graphy could fit at least four stationaries of the could be much expense to be over submitted to the self-graphy could fit also that proceed to bore submitted to the self-graphy could be such expense to be over submitted to the band until they were assisted it would not could be interference.

Since the possibility of obtaining an LF band particularly appeals to myself I would be interested in hearing from suppose who may be interested in forming a lobby to obtain such a band.

J. A. Addoock VKSAGA.

### **QSP**

21st JOTA
Have you completed your errangements yet to help
the Scouts and Guides for the 21st Jamboree on
the Ar7 The dales are 21st and 22nd October,
1272

#### AMATEUR RADIO WEEKEND

The WIA Education Service (incorporating the YRS) is organising a big ameteur radio weekend at Katoomba in the Blue Mountains on July 28, 29 and 30 and October 20, 21 and 22

If you are an amateur and you always wanted to meet that fellow in Broken Hill then why not lowle h mad his family to the big weakand and bring your tamily along, too. It you are atudying for the August exem then why not come along for a two day brush up in mores. Inhory and regs.

If you have just found out about it a strange thing called emeteur radio — their why not come along to the weekend — operate equipment, speak over the air waves under licensed supervision and find out more about it.

Ameteurs students, newcomers will all be helo-

ing each other and enjoying a great weekend.

The YRS hopes to organise further weekends one month prior to each exem.

The fun commences at 8 p.m. on Friday and corollades at 4 pm. on Sunday at the S1 Mary's Education Centre just near Kaleochie railway station to few hundred yards on the Sydney side of the Great Western Highway!

station (a few hundred yards on the Sydney side of the Grast Western Highway)

At the first weekend get together people from 8 to 70 years of age had a great time

Bring along your Satell te gest, radio teletype stations. SSTV etc. and encourage the new

stations, 3STV etc., and encourage the new generation.

All accommodation and food for the weekend is available for just \$15. If you are bringing your family along than It's just \$15 for dad, \$10 for mun, and \$5 per kid.

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Separate rooms are available or, if you want to get into those midnight pillow fights, domitory accommodation is available.

## AROUND THE TRADE

DICK SMITH ELECTRORICS 1878 CATALOGUE This year is Dick Smith Electronics' 10th Anniversary. In keeping with his "think big" philosophy, Dick has produced a monster 100 page catalogue of Itama sold in his eight electronics estimated

stores.
It lists and gives prices for nearly 3,000 items with many of them Illustrated and described. There is also an eight-page data section, full of semi-conductor specs and bese connections, data for amateurs and CBers, useful circuits and component colour codes.

The Dick Smith 1978 catalogue is priced at 75 cents at all Dick Smith Stores and Dealers or by mail order from Box 747, Crows Neet, 2055.

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Baliws Corporation of Japan have released range of entenns changeover relays to comol ment a long list of high quality Amateur Rad accessories.

Two models are available, one covering 1.6 to 170 MHz and the other 1.8 through 450 MHz, with maximum power rating 100W PEP as 200W PEP respectively. Both units offer extremely low insertion loss and

Both units offer extremely low insertion loss and are properly matched for 50 ohms setence impedance.

The case switches are controlled from

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Datigo and masufacture has commenced in Breature of many of the alterion product lines which were termally manufactured in Melitocume for the Queenfand communication market, it is the intention of the company to manufacture ensenants for Queenfand or Ownering or a back-up laceholcal and manufacturing facility for its N.S.W decline, providing a technical conspiration service, improving delivery schedules and maintaining legislatic costs.

The company is under the management of Mr Brian Robinson, while Mr Terry O'Meera, Technical Manager, is in charge of the design and manufacturing facility.

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This estema provides an essentially constant circularly-potential beam over the estimate reposition to LHCP (model ASO-1997AB and Polarization in LHCP (model ASO-1997AB and Polarization in LHCP) into a 50 depress ± 20 from 4 to 20 GHz; 65 degrees ± 15 degrees from 30 to 40 SHz; 15 degrees the 2 degree from 2 to 40 SHz; 15 degrees from 2 to 40 SHz; 15 degrees from 30 SHz; 15 degrees from 30 SHz; 15 degrees from 30 SHz; 15 d

Weighing only 4 ownces, AEL's ASO-1001A antenna is 2.5 in. in diameter and 2.0 in deep. Order data sheet No. 20-15 by writing to:—

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## **FEATURES**

- Extra Range (434-436 MHz) For Satellite Reception
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- \* Highly Stable Zener Diode Controlled Crystal Oscillator and Multiplier Stages.

## **SPECIFICATION**

Input frequency ranges : 432-434 MHz (low) Maximum frequency error : 434-436 MHz (high) at 432 MHz : +5 KHz I.F. output frequency : 28-30 MHz or R.F. connectors 50 OHM BNC 144-146 MHz D.C. Power requirements: 11-13-8 voits Typical gain : 30dB 12.5V nominal Noise flaure 50 mA Maximum : 3dB Maximum Current consumption . 101 MHz (low range) 28-30 Size : 110 x 60 x 31 mm : 101-5 MHz (high range) \_ MHz I.F. Weight : 260g Oscillator frequencies -: 96 MHz (low range) 144-146 96-666 MHz (high range) MHz I.F.

## DESCRIPTION

This 432 MHz converter is intended for use with either a 28-30 MHz or 144-146 MHz receiver to produce a high reliability receive capability for satellite or terrestrial communication.

The unit has two ranges, 432-434 MHz and 434-436 MHz, both for the same I.F. output frequency, which may be selected by means of a toggle switch mounted on one end of the discast case. The second range (high) has been included to allow reception of satellite signals normally transmitted above 434 MHz.

Incoming 432-434 MHz and 434-436 MHz signals are fed to the first R.F. amplifier, which uses a BFR34a low noise silicon transistor. This signal is further amplified by a BFY90 transistor, before being passed to gate 1 of the 3N204 dual gate MOSFET mixer. The local oscillator signal, 404 MHz or 406 MHz, is applied to gate 2 of this mixer, to produce the required intermediate frequency. The use of printed strip-line techniques together with an ultra low noise first R.F. stage, produce a selective receive converter with an overall system noise figure of less than 3 0dB.

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Relative 404/406 Mhz output Better than - 65dB

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## VHE-DHE AN EVDANDING

## WORLD

Eric Jamieson, VK5LP dimension, viv AMAYEUR BAND BEACONS ----VKOMA, Mawson VKIRTA Conherts \_\_\_\_ 164.475 52.450 WW. AW. VK2WI, Sydney VK2WI, Sydney VK2RHR, Mittagong VK2RHR, Vermont 144 910 144,810 144,700 VK4RTL, Townsville VK3RTT, Mt. Mowbuller VK4RBB, Brisbane 52.440 144,400 422 400 VK4RBB, Brisbane VK5VF, Mount Lufty VK5VE Mount Lufty \$3.06 .... VK6RTV, Parth VK6RTV, Kalecoriie 62 300 62.301 VKERTU, Kalgoorie VKERTW, Albert VKERTW, Albany VKERTV, Perth VKTRNT, Launnsalon 85 689 444.500 145 000 22.400 \*\*\*\* VK7RTX, Ulverstone VK7RTX, Ulverstone 144,980 194.200 VKSVF, Darwin JAZIGY, Nagoya E2.478 11000 JA 82,200 KG6JDX, Quam KH6EQI, Hawali TISNA. Costa Blos 90,118 90,110 Wild. 58,860 WASJRA, Los Angeles, USA 85.001 ZL1VHF, Augkland ZL1VHW, Welkato ZL1 \*\*\* \*\*\* 145 150 ZL1YHW, Walkato ZL2YHP, Palmerston North ZL2YHP, Wallington ZL2YHP, Palmerston North ZL3YHP, Christohurch ZL4YHP, Dunedin 71.0 59 550 145,290 140.200 -145 300 145.300

There are no changes to the beacons lies this month, but the continued inclusion of the overseas month, but the continued inclusion or the overseas beacons is necessary due to the rising sunspoil owne and the Lkelihood of those beacons not val cycle and the Exellinged of those describs not : avery chance of tone hauf 6 mates DX during June every chance of long naus o metra UK during June and July for the winter peak followed again by an even better chance of some rare-contacts during September/Detaber with the equinous changes.

What does seem a pity to me is the fittle ad-What does seem a pity to me is the little se-vantage taken of the potential for eastern State ameteurs in VK2 and VK3 to work advose to New Zea.and particularly on 144 MHz. The all water neth which exists between large areas of the two erares and ZL must be open quite often but seems to lack any specific co-ordination from either and to lack any specific co-ordination from extrast and to schleve anything. There are bescons in both countries, and the fact that west-east paths exist countries, and the fact that west-east paths exist along the southern areas of Australia which see exploited fairly regularly between Albany and Adelaide and Me bourne aurely indicates similar paths exist between VKZ and ZL at lesst, on 144 and 432 MHz!

Are the emeteurs on both sides of the Teamen totally uninterested in one another? I have been on a directional line rather than uni-directional. in a uneviced into rather than uni-directions, in a grain are beamed more or less to defined areas rather than in all directions, if this is so it would tend to indicate favouring north-south palha would tend to indicate favouring north-south paths which exc ude Austral a One wonders what ameteurs on both sides of the Tasman are reelly doing to protect at least 144 and 432 MHz with the impending WARC 1879 coming up? The Queenstand boys only needed convincing they could work up and down the coast on 2 metres - after being suitably convinced they now do that, over sreas proviously not thought possible, and they will eventually work the 1000 m le path from north to south, as Townsville to Brisbane, etc. Hence I will take a lot of convincing it cannot be done with some regularity between VK2 and ZL if people were interested enough to make the effort, and I am sure that is all it requires, the effort

I also read complaints in "QRM" on how difficult it is for anyone in VK7 to have contacts with

2 mates eteriore in Malbourne, the bearns can be 2 meers stations in manourme, the bearch can be heard regularly but no one seems to want to work south. Robert VKSAUH in the Gremplens area was complete, of no contacts loto Melhourne and ediscent means From the halfway house of Mr. adjacent areas, tiven the halfway house at m. Gambler doesn't seem to be flooded with contects from Melbourne or Adelaide either for that matter. With Melbourne a Channel O area one would think 2 metre activity would boom, but perhaps it is more of interest to work through the repeaters. Surely there must be many circumstances where a anatast andd he established als a secondar sed contact could be established will a repeater and I note Bohart VKSALIR calls most nights on 144 beaming to Malbourne at short 2000 hours local time. Here in VKS the Channel 7 repeater on Mr. time. Here is VKS the Channel 7 repeater on Mt. William is regularly monitored to warm of imwill be able to monitor Channel Sé from the same will be able to monitor Channe

Having not the supers out of the way, on to more region got the moses out or the way, on to more interesting things! During the month I received a letter from Bob KSRNQ. Box 167, Somerast. Call. tetter from 900 KNNNK, Box 167, Somerset, California, 95884, USA, and he supports the efforts being made here for the use of 50 to 52 MHz. The common state of the com dictions this remand support outle is exponent to reach a peak amonthed number of 150 in April 1980, making it the second createst sunspot maximum in recorded history, the greatest being 1956mitted the use of the fower 2 MHz of the 6 mater hand Much could be added to the knowledge of band Much could be added to the knowledge of VHF propagation if VK and ZL were permitted to use the part of the 50 MHz band that is useable to other VMC anthuniness around the world (all's to other VMF entirusiasts around the world. Let t tace it, it's just not practiceous to 2 MMr (Intening for weak signals

"I was year action on 6 maters during 1958-69 as a member of IGY and IGC-59, during this time t worked many Zt.s. (requestly on a day beals or . For some reason VK is a very difficult path on 50 MHz and despite the enormous number of 21, coenings there were only 3 coenings to VK I zi, openings there were only 3 openings to the tenow of, and 2 of these were to VK4, during which I worked VK4ZI on CW. the other was a very marginal opening to VK2 and had a partial contact with VK2ZAO Also at one time I heard contact with VKZZAO Also at one time I beard VKSBO or VKSBC teating, but being so long ago I format which one it was However, after the ZLs were moved up to \$1 MHz we had only one open. ing to ZL from WS, the MUF apparently dropping off cults sharoly. No VKs of course

"During the 1958-50 support maxima. If the ZL/YK authorities had not dragged their feet in granting 50 MHz authorization. I am sure ZL and VK contacts could have been made as early as 1957 due to the number of backscatter openings from that direction at that time

"I do have both transmitting and receiving capebility on 52 to 52.500 in the worst case, but do hope you guys will get 50 MHz authorization." (Thanks for writing, Bob, we live in bopes here of course for some consideration—6LP.

Graham VKSGB writes again with a very newsy letter of mouth-watering contacts from the Darwin keeping a chronological note of Graham's activities. then this follows on exectly, starting with April 6 maines 1010 to 1330Z. JAZ. JAS. JAS. JA7. HLSWI and KG6JDX for 7 contacts. On two metres 1107 to 12507, 26 contacts all to JA4 and JA6 areas. Additionally, on six metres, KH6EQI heard and JA28ZY recorded KHSEOI 0800 to 0730Z and FK8AB 0400 to 0445/2 on 52,064 MHz1 11-4 12-4 6 metres, 0320Z WASGUB/KH6 0325Z KH6IAA 1250Z KG6JDX Same day, Brian VK6VV worked 25 JAs on two metres in JA4, 5 and 6 George P29NV hearing JA low band TV KG6DX worked KHEEQI at 5 x 9 0400Z, then VK3OT (\$39) and Rosa VK4RO, VK4RO worked WABGUB/KH6 also. 13-4. Six metres open but no contacts. Two

metres 1135 to 11552 JAGHI, JARIDS, JREANK, JHBUKM and JHBCTY 14-1 Six metres, KHBEOI heard, 1033 to 13002 JH4PFU, JA4MBM, KLWH, JA2B2Y, KGBJHI and JHBTEW, On 2 metres 23 contacts between 1958 and 1205Z to JA4, 4 and 6 areas as usual, but in addition JF3IGZ, which is the first time Graham has mentioned a 3 area on two metres. JAHIEM reported that on 13-4 like following were heard in Japan KH6EQI, KH6HI,

VIEWER WATTY FERRIS KOR POR VK2 3 4 5 6 7 TJERMM, TOCK, FREAD, KUD, FZN, VKZ, 3, 4, 5, 5, 7 and 8. Very good conditions and a very long opening KGB open very late at 9 ght and the low and of six was files 20 metres!

15-4 10137 JESUI 13307 JHEVGY 13027 JA2LIV 15-4 1013.2 JF3III, 13302 JH6VGX, 13022 JA2IJV, 13032 JA2BZY Brian VK8VV reported no signals on 2 metres this date, but an afternoon opening on siz JA2BZY reported KH8HI at 03362 and VK7DA 0700 to 08002 16-4 Six metres. 02132 KH8IAA, 0229 KH8HI, 0400 KH8USI, 0630 WABGLB7KH6. 0700 IAAVED 0700 IASTEN 0114 KOKINY KOKINY U/UD JACTES, C/US JAZDON, U134 KUBJDA, KUBUT, 1255 JATWUS, 1337 JN8FMA, 1358 JHDFW, 1404 HLSTG. (In other words, a x metres open to some-where for 12 hours!—SLP) Dn 2 metres 1117 to 12137 las and 8 for 9 contacts information re-12132 JAS RNO S for 9 CONTROLS Information received from KhistiA. He worked on 15/4 littlo JA via backscatter, reported 302CM working JAs also, and he worked four LU and one CE stations 0130 to 0300Z on 15-4. On 34-4 at 0200Z KH6HI and MARRICHIN CHISTIAN CONTROL KYSMIN In the Department Canality MARRICHIN CHISTIAN CONTROL KYSMIN In the Department Canality

"From KHEH! Open to South America today "From KH6HI Open to South America today (16-6) but only weak CW FOSDR will be back or six in August. WB6KAP now K6FV has into on in August, Wishkap now Kery Res I ZKI KHSHI worked YJB 0730Z on 13-4. From KH6JSI Worked YJB and two P29s on 8-4. XE1GE Mexico active on six. From JA2DON VK3, 4, 5 and 4 into JA on 18-4. From KG6DX YJB work no 6 min JA on 18-4. From RideDX TJd Working JA 16-4, C21TA reported active on 52.050. From JHMTFW 0800 to 30007 KH8 on 18-4 worked WK8 and VK49IM, K9PNT/DJ2 working JA1; P29 to JA in evening "

JA in evening."

17-4 On s.x metres heard KH6EOI 1025 to 13492 worked JAI, 2, 3, 4, 5, 6, 7, 8, 9 and 0 as well as P29ZNL On 2 metres 1105 to 11572 10 stations in JA4 and 5 districts. Message from JA2BZY 0938Z 15-4 worked KH6EQI on CW 0648Z JACEDET USSEZ 15-4 WORKED KNIECKI ON CW D648Z 16-4 Worked VK3OT and many VK6 stallons in Perth an 6705Z JAZDDN worked FK8AB D450Z on 52 010 to 87052 JAZDDN worked FREAR 04502 OF 52 010 From JAZDDN A2 worked on 65 today KG6DX full scale on mater at 0000Z. Heard VK5LP 5 x 2 and worked VK5KX 0730Z 18-5, also VK3OT, HSTEN heard VK4 and YJ8KM today From Brian VK6VV heard VK4 and YJBKM today From Briat VK8VV Worked KH6IAA, WA6GUB/KH6, 0223Z. KH6EQI hearon in all day! The content with P297NI man beacon in all day! The contact with P292NL men-tenned at the start of paregraph was notable in that it was Graham's (VKSGB) first F2 contact with P28 for many years Dick is located at Medang and nums 20 wetls to 5 elements.

18-4 No sions a 19-4: Six metres 1027Z JA4PSO 1925 JAPQYC 20-4 Heard KHSEQI Six metres: 1213 to 1305Z JA2, 3 and 6 for 7 contacts. From JA20BZ: Worked VK4 at 0730Z From VK6FQ He JACKSE: Worked WH has observed 7 or 8 JA Open-lings this year. Worked 16 stations on 18-4 and 31 on 13-4. VK6ZFV heard VK6VV on two metres on 17-4 vie F2! Brian had his OW Iden! running with his beams (10/10) looking north Time about 1800 local (Perh) time, and signal weak with QSB

21-4 Six metres 1027 to 1230Z 17 stations in JA, HL and KG6 areas. Two metres, 1112 to 1139Z JAL, 5 and 6 for 10 contacts. From KG610X\* ZL TV into KG6 today on 50 740, 50 750 and 50 780 MHz KG6JH worked VK2 KG6 hearing VK1ZAR working JAE at 1640Z 23-4 Stx matras heard working Jose 81 10402 23-4 SIX M81/88 148/06 KM6EQ 1032 to 1255Z, KG8JIH, KG6DX and JH6TEW Two metres 1103 to 1218Z 11 contacts JA4 and 6 ares From KG6JIH Into VK4 again. Thought he heard a VK7 on CW KH8HI reports JD1YAA on 50 10 is on again from Marcus Island. Six metres, 0955 to 1032Z JA1, 2, 3, 7, 6, 9 244 Six metres, 0963 to 10322 JA1, 2, 3, 7, 6, 9 and 0 for 11 contacts, this an afferson type opening 25-4: Six metres, 03002 KH6JSI, KH6IAA 11462 HJSWI On 15-4 A1 KH6IAA worker four VYC2s and PS2 25-4 Sx metres, heard KH6EQI 1020 to 13062 JA2 and 3 for 5 contacts. JAs 1029 to TSU62 JA2 810 3 107 5 contects. JAS heard on two metres but none worked From JA2BZY Worked 3D2, FKBAB, YJ8 and KH6. VKB JA2BZY WORKED 3UZ, PREAS, TJS BIN KING VICE at 0700Z 5 x 9 + 27-4 Six metres, DS15Z JR3PEO, 0628 JH4SSP. 0636 JF3DYA, 1040 KG5J H, 1946 RG&JDK, 1047 JF3NJY, 1395 JR1MLZ, 1312 JH4MTH/1, JLINDP and 1318 JF3LOY five hours of openings. On two metres 1265 JASAHB KG6JIH reports working JA on 26-4 and heard ZL TV on 24-4 28-4 No aignals

29-4 Six metrex, 0420Z KH6IAA. VK4MS reporte wery good JA opening 28-4, and has heard KH6EQ1 18 days in a row? 30-4 Stx metres, 1040 to '3192 16 contacts to JA, HL and KG6 Two metres 1238Z, JH6IFF KG8s all worked CR9AJ on 30-4 st 5 x 5 + 1-5. 1049 to 13322, AA1, 2, 5, 4, 5 and 6, 14090, for 27 contacts from netters (Sinn McXIV) (Sinn Mc

5-5 SIx metres 1021 to 1039Z JR2SQZ, JE3JCV, JA3VXH and JA4LHR. 8-5 SIx metres, 1020 to 1215Z 12 contacts to JA P29 and KG6. Two metres JHSTEW 1200Z JASOFH, KGSJIH JDIAPC, JDIADP active on Bonin Island. Worked VK4RO at D830 his time! Working Es into JA. P29 NOW HAS 50 to 54 MHz/I Bruce P2988 is located at Yorks Village near Kalnantu, between Goroka and Lae, and runs a TV505 to a ground plane JA2BZY advises WA4TNV/K\_7 Sheyma Island been worked in JA via Es. 8-5 Six metres 0726Z KHBJBI, 0730Z WABGJB/KHB, KHBIAA, 1109 PA4MBM, JA9QYC, JHTVYN, JATETO and JR12IX KH8IAA advises big two metre tropo opening from Hilo (Hawaii) to San Diego (Callfornia) lodgy and still on while working on six Most contacts via the repeater on Hito 146,220/ 146.820, but Al made It simplex by driving up the mountain to 7000 feet and used a five element beam on 145 100 A also worked three W6 stations on backscatter on 8-5 but no Es opening to W as yet.

10-5 Six metres, 1100Z to 1155Z KG5JIH, JH6EYL and JH2NUU Two metres 1210Z JH4JPO on SSB and CW There is a commercial RTTY station in JA on 146.800 which gives a good indication of two metre conditions 11.5. NSI gunnale Lyn VK4ALM advises he has worked 560 JAs on The CR9 DXpedition left their TS800 Mecso for local operation 12-5 Six metres, heard KH8EQI 1000 to 1040Z 10 contacts JA1, 2, 3 and 8 JH6TEW sowies Es between JAS and JA? today Hal VK4DO has worked 924 JAs since February KG8DX reports a new call on six in KG6 might be KG6JSG and that maybe KX6 is JH2VHL reported today he heard VSSFX HM1EJ(7) KQBJIH, VK4 VK6 and JDF 14-5 Six metres heard KH6EQI 1005 to 10532 worked 9 JAs in 1, 2, 3 and 7 districts JA282Y worked HL9WI and HL9TG and heard VS6BE calling VK at 0400Z. JFDWO rumours that KG8R Saipan Is on six and also KX8, 15-5 Six metres, 0950 to 10292, JA1, 2, 3, 4, 7, 9 and 8J9ITU (JA9)

Graham makes some final comments. "I limite we have seen the last of the JA-VV Keep content for a while but six looks also hotizing on while short paried yet it would appear the akin doesn't favour. JA as right so well attempt Yo m 4875 well libit the evening but no amazine of the yet of the yet

"Six metres 580 contacts in 80 openings to JA. 55 contacts in 33 openings to KG6, 33 contacts in 16 openings to KH6 15 contacts in 14 openings to KH6 15 contacts in 14 openings to KH9 P29ZN, and P29B8 Also VK4RR on back-

"Two metres 359 contacts in 31 openings to JA "The openings are when I personally centacted a station and do not include days when INCOM contacted areas when I didn't, nor days when I haven signals only "

My graleful theats to you Greham. For the totoble you was team to keep the rest of the country informed of your activities, to prepare the representation of the country informed of your activities, to prepare the prepare you have for so many section special prepare you have for so and the prepare you have for the your activities and the prepared to t

we surely miss out on many contacts for no other

reason from we are two megaheuts higher in our operating bank from 64th higher which means poorer asterosas, polorer obujeresed Cowerage and it is a most lovatisting experience. Now with he report which has just come to hand that PSP have been granted the full if AMEX rom 50 to 54 MEX. If a reven move invariantly, it would be interesting to the control of the cont

Reterring back to Craham VKXCB and Ne report once again. I make a cologies for using up a law but of seace for some months with his falar but of seace for some months with his faterior of the seach of the seach of the searand pages. The Feath, news, and being preareded in chronological form I lawor flows and shady these histoges are petiting the cold information and the seach of the search of the search of conting step, the load reports of Garbanam intomation kapps a few of the decident operation in the seach and other sease on their toes, and are major, allowing for the 2 Mort differential?

Tony VKSBV in Kalgoordia has written and quotes a small pieregraph from the WA VHT Group Bulletin "It is interesting to dote that the RSSB policy is to try and escabilla a new (to the UK) Amateur Band in the region of 50 MHz and profile Region 1 Conference days to be held this month. If hely message to pull it off (Regers crossed) who is or 8 monts (soo\_MssL) DXT".

Good luck to the boys in UK, they must be really out on a limb with their 70 Mitz band. also writes to advise of various 6 metre openings to Kalgoortis, namely, 17-4, 1389 to 1436Z JA1 only, S3 average, 5 stations. Also heard VKAZEO Koolan Island on backscatter JHAPFU very weak and short opening. Peaked to for 30 seconds, time 9630Z 20-4 9610 0706 JA1, 2, 3 and 4 areas, S5 average, peak S7 13 stations. 25-4 0642 to 0756Z and 0852 to 0900Z, JA1, 2, 3 and 4, S5 peaking to S8+, and 23 stations. JA also working VK4 16-4 and 22-4 Week but audible JA signals on 50 MHz No response from calls on 52 MHz Time 0800 that 2 MHz difference again!) 27-4 9836 to 07132, JA1, 4 and 8, plus 0, S3 average peak-ing S8, 8 stations 29-4 0719 to 0741, JA1, 2, and 0, S3 peaking S5, 4 stations 30-4 6702 to 0750Z JA1, 2, 3, 7 and 9, S4 peaking S6, 12 stations Could still hear JAs on 50 MMz section at 0900 but nothing on 52 MMz Sleve VK3OT writes to say on 12-4 he heard

Serve VRDDT writes to styll on 12-4 he heath HallOSI who mas I wate output XGBOX-VRSDT equipment both ender YMBO store to the common YMSI ten way Sterve worked JAI said 5, one sech 16-4 GSS0 to 07002 atl JA erese except JAS Second opening 12002 with week signals on 52,000 and 30,110 Some JAs reporting all States on 12-4 succept VRT — Shere wholess where you see

Sieve also writes "A liener us AMPIN above photos of Robertova Radio Cibe in Essens Dispris, despecting transmitter used to send signals to VK in 1978 All values with the Seal at type 220 would you believe Power supply casts mercury on sends. Rig Book very near at front especially the Residan writing and receiver disk Antenna 4 delensed good type with upper and lower sections fed actively hotpons are mixed above as worth page with pipe and lower section with pi couper for 10 meyers, also above 200 weeks a couper for 10 meyers, also above 200 weeks

The six matre rig appears to operate on several modes, PM, CM, etc., and facets every much like any home-brew transmitter from the late sixten the 800e scoted was a ceremic type no dead from the Ressant type 522 fitted to Allied translated from the Ressant type 522 fitted to Allied translated from the Ressant type 522 fitted to Allied translated from the Period to Store any solid state parts. The second World War None of the equipment in the photon shows any solid state parts. Only 5 fitted, a shown as 200 MHz.

"Total score this season were 157 QSOs with Japan 58.11 airmail to JARL OSL bureau. All JA districts worked plus KOB Missed were HLS and DUOWPX That's all from Western Victoria except would arryone be Interested in Johing in the purchase or a FTWSSB for VRNDZ and lature DX locations? One is mailable at about \$170, that: \$8 at 20 people. \$5 if 25 chip in How about \$17 \$\text{Merk Rows a rig for anyone to use and borrow to see and borrow to be a fixed and all at the end of the term \$0.00 ft. \$1 \text{Merk Rows a rig for anyone to use and borrow to be a fixed and the term \$0.00 ft. \$1 \text{Merk Rows and Selection of the term \$0.00 ft. \$1 \text{Merk Rows and Select

Robert VYSAMUR writes from Hally Gpp in the Greenfairs with some never from a rase which for some reason seems to put a better 8 metre from the put of the put of the put of the The gpp in Millora are settler, and orthodalesto. Noel VYSAMU has a 16 over KLM which lifts over from writing and are as supplied on hear conent of the settler of the settler of the a few off down on Noel. but still good. Kells VGSZTT, new to the band, is sold to workable. WGSZTT, have to the band, is sold to workable, when the settler of the settler of the public to anywhere but fook towerds Melbourne and Adelaste more impairs from 2000 EST.

"I arranged with Alan VK4ZAF to take part in meteor scatter chacks during the predicted showers for 45-78 to 55-78 and buil a rhombic pointed at him with slight elevation (25 degrees). However, the steps could not be continued due to the arrival of first harmonic on 4-5-78. Such is life!

"I have not received confernation of my context with KN944 and KN8521 yet, but five in hopes Costalls are as follows: 4-79 Maintaining states no 50 for 1 heart KN8520 heart K

Congratitations to you, Robert, for you'r efforts with these two stations and for their co-peration in working you. Robert a tape has been examined by me and 1 confirm the contact made, also the very less! CW station very week in the noise. Eventually we may all be able to learn the station's call of it can be deciphered.

Robert siso had a bell on 114-72 when he worked into a mase of JA stations for three hours. Worked all call areas. Along with others, he's not wary happy at the prospect of a Channel SA 100 kW TV sistion at Mt Dundas, masr Hamiton Nother is anyone elsa, and I can see "I's being ween more widespread, thenks to the establishment of Mt.

Two maries has been rether guide along the constitution consists clearly the part covide of morths, but the graderine from the first part covide or morths, but the graderine from time to line about sometime working sometime, work half but it will be the constitution of the constitution

I draw your attention to the new Australian reports set for the 10 GHz band and recorded in the separate box in this column. Congratulations to Stan WK4ZBH and New WK4ZWC for their efforts in astending the distance to 105 in miles. I note the current world record for that band is 324 miles, held by 44BHS and 64BXOXX on 144-579.

Ed VK-CEZ in Townville sands a message to so the cover size has the call of VK-MRTR, and will be liften jitters writt Baptamber after which he will be moving to Longesch after having a wife puce a ball and chain on him Arriver stated on the work of the sand chain on him Arriver stated on the work of the sand chain on the Arriver stated on the work of the sand chain on the Arriver stated on the work of the sand chain of the sand chain of the work of the sand chain of the sand

Ed also advises VK4ZRQ will be shifting from Brisbane to Townsville for two years, and that the

VK4RTL beacon has been heard in Hawasi strongly occasions this year Additionally, VK9ZM on Willis Island monitors 1441, 52,050 and Townsville repeater R42 On 6 maires he uses an IC502 plus amplifier to produce 25 watte to a 5 ell beam; on 2 metres an 'C202 plus 100 watt amp to a 10 element and un 432 MHz hopes to be soon running 10 watts and working through Oscar Thanks, Ed for the name

I am working towards a separate article for Amatour Redio to appear in the August or Sep-tember issue on the subject of the six metre temper asse on the subject of the six metre band and a few other relevant matters. This article will be based on facts, floures and thoughts and does consided from various Interested operators of the aix metre band wa your fetters. I hope you will take time to read it and digest the thoughts thoroughly, and see what can then be done

As I now want to go out to the shack and see If anything is happening or 2 metres I will close with the thought of the month. "Statistics are like sauseges. You have to ask who made them cooked them and who availoned them." Thanks to John VK2ZXU of Broken H.II. for that one, It came a long time ago and I lost it until recently 73 The Voice in the Mille

#### AUSTRALIAN 10 GHz RECORD

On 14-5-78 at 0425Z Stan VK4ZSH con-facted New VK4ZNC over a distance of 106.1 statute miles on the 10 GHz band Reports were 5 x 7 both ways with OSE. VK4ZSH transmitted on 10.194 GHz from Springbrook Mountain 3190 feet as it and VK4ZNC transmitted on 10.000 GHz from Howells Knob 1942 feet as I The path was slightly obstructed by Mt Tamborine,

25 miles north of Springrook, which secounts for the OSB (Freezel zone ob-Transmitters ren 100 mW Gunn diodes 150 kHz (F3) deviation Aerials 19 Receivers used Fratly a high IF north Necevers used trarry a high re-of 144 MHz and then a low 8F of 10 MHz with a VCO down converter with AFC. The inforceave side of things was a burglar alarm module with a higher power diode Inserted (\$60.00) and 1523 receive

mixer to separate cavilles feed to into the one hern Star recommands strongly against any-one else using high power Gunn diodes as they are prone to severe instability (broadband agectrum generalors) and it would be virtually impossible to get them working set electority without a 10 GHz spectrum analyses - VK6\_P

## AMATFUR SATELLITES

Bob Arnold

VK3ZBB

ORCAR 7 Although this sale lite now appears to have stopped its made jumping, a number of reports have been received concerning noise and audio distortion, OSCAR 7 at times completely disappearing for minutes. The passes in which these enomalies popur are not frequent, but the irregularities are obvious at the time

A number of explanations have been offered, such as webble or rolling of the spacecraft However I passed this query to Harry JATAMG, where s the AMSAT Asian Pacific Net Co-ordinator,

for his comments, and he stated he had also had smilar reports, mentioning that OSCAR 7 when in Mode B had developed a alight problem under conditions it went into oscilation and per odice ly rolled

As this spacecraft was built primarily because the Phase III spacecraft would not be available until late 1979 OSCAR 8 has now been in orbit 116

evs to the 30th June, 1978, and has completed 1623 orbits to that date

For the first few weeks after its faunch, orbit mes varied, but now il appears to have stabilized. making it much easier to establish an accurate

In comparing reports from Japan via Harry ATANG he states that OSCAR 8 signals are DATANG superior to OSCAR 7. this being more noticeable when in Mode J, this is, however contrary to what has been found here, but could be due to the chance of the circular notarization of the PHASE III

Now that OSCAR 8 has been launched and per forming satisfactorily, we await the launch of the

Design work will be completed during 1978, as will prototype of Transponder, Computer, Attitude/ Stabilizer and Power Systems

PHASE III is now destined to fiv on the ARIANE 2 launch from FY7 in December 1979 into an elliptical orbit with a 932 miles periose and a northerly 24,249 miles high apopee. I am sure all those amaleurs interested to Satellite Communication will be looking forward to

### ORBIT PREDICTIONS - AUGUST 1979 OSCAR 7 OSCAR S

the launch of this bird.

		Times I	Long.			Time	
Dat	p Orbit	Z	w		ie Orbil	z	-W
1	18967A	0053	71 7		2069A		54
2	188 <b>80B</b>	0147	85.3	2	2082A	0104	
3	169928	0047	70.2	3	2096A	0109	
4	17005A	0149	83.8	4	2110A	0114	58
5	17017B	0040	58.6	5	21243		
8	17030B	0134			2138J	0125	
7	17042A	0034	67,0		2152A	0130	62
8	18055B	0125	80.6		2188A	0135	63
9	17087B		65.5		2180A		
10	17080A	0122	79.1	10			40
11	170928	0021	63.8		2208A		41
12	17105B	0115	77.5	12	22223	0012	42
13	17117A	0015	62.4	13	2236J	0017	43
14	17130B	0109	75.9		2250A		45
15	17142B	8000	8.08	15	2264A		46
18					2278A		
17	171678	0002		17	2292A		49
18	171808	0058	72.8	18	2306	0043	50
19	17193A		86.4		23203		
20	17205B				2334J	9054	
21	17216B	Q144	84.8	21	2348A	0059	
22	17230A	0044	69.7				
23	172438		83.3	23	2376A	0109	
24	172558	0037	68.1	24	2390A		58
25	17268A	0131	817	25	2403A	0120	59
26	172908		86.6	25	2417J		
27	172938	0125			2431J		
28	17305A	0024	65.0	28		0136	63
29		0119	78,6	29			64
	173308						
31	17343A	0112	77,0	31	2487A	0008	41

## AWARDS COLUMN

#### Brian Austin, VK5CA

P.O. Box 7A. Crafers SA. 5152

BLUE MOUNTAINS AMATEUR RADIO CLUB AWARD This certificate is available to smalleurs who make live different contacts with members of the Blue Mountaine Ameteur Radio Club at John 3rd April

Applicants should forward 50c in stamps, mor order or a personal cheque to VK2AUX, VK2NCM, 80 Old Bathurst Road, Blaxland, N.S.W. 2774. Applications should include five call signs contected, dates, frequency, mode, names and QTH

DXCC COUNTRIES LIST Delete FH Comoros. Only contacts made before 6/7/1975 count towards this country Add D6 Comoros.

Add FH Mayotte. Only contacts made after 5/7/19/5 count for this country.

### WAC - WORKED ALL CONTINENTS

- 1. The award is available to licensed amaleurs 2 Contacts after 1945 are valid 3 Applicants should send cards to their IAR, member society who will then certify the claim to the HQ society (ARRL) for issuance of the
- award. Where such a society exists applicants must be members of the society Ganadian amsteurs send QSL cards to ARRL HQ. 4 Contacts must be made from the same location
- the "same location" being taken as an area not exceeding 25 miles (40 km) in diameter 5. The award is normally resued for CW/Phone endorsements are available for 2 x SSB.
- all 60 metres or all 160 metres 6. There is no tee for the award Requirements One confirmed contact is required

from each of the six continents - North America. South America, Europe, Africa, Asia and Oceania FIVE-BAND AND BIX-BAND WORKED ALL CONTINENTS AWARDS

### The following rules apply

- The basic award shall be known as "Five-Band Worked All Continents" ("SBWAC"). An enworked All Continents ("SBWAC") All of dorsement for "S x-Band Worked Al Continents (6BWAC") shall be available upon submission of proof of this additional accomplishment
- 2 Applications shall be sent by the applicant, accompanied by the originals of the required confirmations to the HQ of the member acciting for the country in which he resides The HO of the member society shall then examine the application and, if it is found to be sat sfactory, shall so attest to the HO society ARRL, which shall issue the cartificate and deliver it directly to the applicant if the applicant resides in a country not represented in the Union, the applicetton shaft he sent directly to ABB!
- 3. Where the applicant reards in a country which is represented in the Union, I shall be neces-sely for him to hold membership in the representative member society in order to be a lable
- for the award 4 The continents boundaries defined in the WAC rules shall apply to 5BWAC and 6BWAC
- 5. To be used toward the award, contacts must be made from one station (n terms of I pence and call latters but not recessor y of equipment) operated at one location. The term "location" shall be construed as representing one maironnistan area, or, ellernative y en area not exceeding 25 miles (about 40 km) in dameter
- 6 Contacts must be made on or after 1/1/1974 to be used in qualifying for this award

### ASHBURTON NZ CENTENNIAL AWARD. ASHBURTON RADIO CLUB Duration 1st July to 31st August 1978

- O. Jac 1 80 points to qualify for the award. VK and DX
  - stations 40 points. All bands from 160 metres to 1296 MHz All modes
  - Each Ashburton station contacted will be credited 10 points Contect with Club stellon ZL3AF is compulsory
- 4. Repeater QSOs not valid Two-way QSOs v.s. OSCAR will be awarded
- 20 points per DSD
- QSI cards not required. All sixtions in Ashburton may be contacted twice BUT NOT IN THE SAME MONTH
- 8 There is no charge for the award. SWL award on a "Heard and report of
- stations RS(T) Time limit of three months after 31/8/1976 for
- application for the award 11 Previous holders of the Ashburton Centennial Award will, on request, be awarded a special ment seal to attach to their award
- Application for the award to Vern Loveti ZL3AQ 148 Allord Forest Road

Ashburton NZ

The following are the most active and should be readily available ZL3AF Branch station, ZL3AG George\*, ZL3AQ Vern\*, ZL3AH Barry\*, ZL3FA Graham, ZL3FN Dick, ZL3IQ Bill\*, ZL3JL Andy\*, ZL3LG Colin, 3UN Lex, ZL3AAN Max\*, 3AFB Ken\*, ZL3CX Mike\* VHF only ZLSTAK Reg, ZLSTFZ Don, ZLSTJG

\* These stations are also on VHF

### WICEN

#### WHY BOTHER WITH WICEM?

WHY SOTHER WITH WICER?

Have you ever thought about how many privileges

Ameteurs have compared to other radio services? We pay half the cost of a commercial mobile licence for any number of transcelvers fixed or mobile (only radios used by emergency services have a lower licency feel, we can use any type of transceiver using many different modes, whereas all other services must use type-approved equicment, we can use serials with any amount of gain and our frequency allocation is second only to the

This pryleged position was achieved due to emeteurs playing vital roles in the development of radio communication but due to the high cost and hgh level of technology schleved today it is almost impossible for smaleurs to contribute so they have in the past when so many major laboratories are spending small fortunes in this

finle The only way to justify our position is to look upon the Amateur Bervice as a reserve of experienced operators with their own communicalions equipment who can use their spectrum alloca Ilon to practise and develop their capabilities until required in an emergency to provide vital com-municalions that may save lives. If you feel that you will provide the required service when the need arises, because you are an experience arrateur than 1 suggest you take part in one WIGEN exercise and you will realise that there is far more to being a good message handler than just being a good amateur operator. Of course there will be many amateurs who just can't find the time to become WICEN operators, but they can still to begoins within back and leaving the channel clear white a WiCEN exercise "hogs" one or two of our thousands of channels.

Remember that our public image may ultimately make the difference between a bright future or no can provide a service to the community it will be the best form of public relations exercise Ameleur Rad o could provide

Mike Bighter VK2RMM NSW WICEN Deputy Co-ordinator.

## INTERNATIONAL NEWS

Publication of the FCC's 6th Notice of Enquiry in the USA gives some further glimpses into amateur affairs leading up to WARG 79.

The first amateur band on the list is 1800 to 1900 kHz as a proposed exclusive world-wide allocation and 1900 and 2000 kHz, shared The next is the band 3500 to 3800 shared in Region 1 with Fixed and Mobile (except seronautical mobile) 2500 to 3900 exclusive in R2 and 3500 to 3900 In R3 shared with Fixed and Mobile. In addi-tion 3900 to 3950 is shown as shared.

The next band is 40m where they 6950 to 7250 kHz for amateurs (6950-7100 includes Amateur Satellite) for Region 2, 5950-7250 in R1 and R3. The comment about this band was that the FCC shared ARRL's concern regarding breadall solution which they propose for HF broadcasting (n 5th NOI) will result in more disciplined

Next on the list is a new exclusive amateur band from 10100 to 10200 kHz proposed for all three Regions 14000 to 14350 kHz exclusive is unchanged (Amateur Satellite Service 14 to 14.25). Another new band proposed for exclusive amateur 21450 remains unchanged except for the addition of 20550 to 21000 kHz Then comes a new band for both ameteur Services 25110 25210 kHz The table continues to list 26960 to

27230 kHz for amateurs in Australia and New Zealand, 28 to 29.7 MHz remains unaltered.

Proposals for the 6m band for ameleurs refers only to Regions 2 and 3 where the allocation is shown as 50 to 54 MHz in R1 47-88 is for broadcasting. Numerous footnotes remain including Footnote 240

144 to 146 MHz is shown as explusive for both meteur services in all Regions, with 145 to 145 MHz as amateur oxidusive in R2 and R3 but for fixed and mobile in R1 Most of the allocations from 136 to 144 refer to space research and space nautical mobile from 138 MHz. No broadcasting is shown for these segments.

In Region 2 amateurs are included in 220 to 225 MHz shared with Radiolocation and Mobile For 70cm the proposals remain 420-450 MHz for

R2 and R3 but only 430 to 440 MHz, as now, for There is a modification to footnote 320A which proposes additional band segments for the Ameteur Satellite Sandre on the evision harmly Interference conditions for 1250 to 1280 684z, 2390-2400 MHz. 5650-5670 MHz. 78-81 GHz. 185-170 GHz and 240-250 GHz. For R2 a shared amateur allocation (secondary) appears at 902-928 MHz where the primary services are fixed and radiolocation.

1240-1300 MHz includes ameteur as a secondary service for all Reploys to Radiolocation 2300 to 2450 MHz includes emaleur as a secondary service in all Regions. 2450 MHz ± 10 MHz is proposed to be designated for the wireless transmission of power, space to earth and space to space. An amateur shared allocation from 3300 to 3500 remaint in R2 and R3. Amateur is still shown secondary from 585g to 5850 MHz in all Regions and 5850-5925 MHz in R2 10000-10500 MHz mains in all Regions for ameteurs on a secondary basis to Radiolocation, 24 to 24.05 GHz continues auclusive in all Ranines for the two ameteur say. vices plus 24.05 to 24.25 GHz for ameteur shared with radiolocation as the primary service as usual. After that the proposed amsteur bands for all

Regions are 49.8-50 GHz. 76-81 GHz. 185-70 GHz. 240-240 GHz and all above 300 GHz

All the above is necessarily a very brief resume All the above is necessarily a very one recom-of a voluminous document Another new footnote is proposed, namely that 3790-3800 kHz, 7240-is proposed, namely that 3790-3800 kHz, 7240-18165 kHz 21440-21450 kHz and 25200-25210 kHz be allocated to the enateur service on a worldwide princity hasis for use by stations covering the scene of a natural disaster. Such world-wide priority only to be afforded to communications by or with stations operating at the scene and during the time of the declared natural disester Is in again emphasised that all the above repre-

## sonts proposals in the USA's 8th NOI. JARL VISITOR TO VK

Professor Masskazu OMerke ("Mass") JASAF, and his XYL with Peter Dodd, WIA Secretary and Business Manager, and David Wardlaw, the Federal President (R.) Mass visited Melbourne and Sydney on a flying package tour early in April and is the author of numerous electronics reference books.



250 Hz

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The unit will function on 234V AC 50Hz for bench use or on 12V DC Double's ded glass epoxy circuit design assures stable and reliable operation for many years to come. A 'must litem for 144 450 MHz operators?

#### **TECHNICAL DATA** Frequency Range

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Accuracy

YC 500-E model 0 02 PPM. YC-500-S model - 1 PPM. YC-500-J model - 10 PPM

Display Digit: 6 digits Display Time:

0 1 or 2 seconds

Counting Time, 0 001 or 1 second Input Voltage Input 1 - 25 mV to 20 V RMS Input 2 -- 100 mV to 2 V RMS

Input Impedance

Input 1 HIGH 1 Meg LOW 50 ohms Input 2 --- 50 ohms

Input Capacitance Input 1 - Less than 20 PF

Weight Approx 32kg

Input 2 - Less than 20 PF Operating Temperature: 0 to 40°C Power Requirement

AC - 100/110/117/200/220/234 V

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#### GENERAL

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- 0.25 29.9 MHz AM. SSB. CW
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  SSB/CW Better than 0.7 µV for S/N Power consumption:
  10 dB AM Better than 2 µV for S/N 25 VA
  10 dB (400 Hz 30% modulation). Stay:
- · Selectivity: SSB/CW ±1 5 kHz (-6 dB), ±4 kHz (-50 dB)
- Random wire for 0.25 1.6 MHz 50 ohm unbalanced feed for 1.6 - 29.9 MHz Speaker Impedance:

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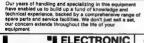
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- Power requirements:
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# AMATEUR RADIO ACTION

## IS THE NEW GENERATION AMATEUR MAGAZINE







Whether you're a CBer, wondering how hard it is to become a Novice, a Novice wondering how hard it is to obtain your full ticket, or an old time ham — wondering what the hell is going on anyway — we think you will find plenty to interest you in this new magazine.

#### PLEASE ACCEPT OUR APOLOGIES

When we published the first Issue of AMATEUR RADIO ACTION, we greatly underestimated the market, and in consequence, many would-be readers were unable to obtain a copy before it seld out. We can only offer our sincere applogles and advise that stocks to newsagents have been greatly increased — but we still suogest that you be early.

#### **ALSO OUR THANKS**

Publishing the first issue of anything is invariably a testing time on the nerves — your sceplance of AMATEUR RADIO ACTION proves to us that the magazine is on the right track. Sure, there were (and undoubtedly still real areas which can and will be improved but, overall, your response was extremely flavorable and for this, we thank you.

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## DIVISIONAL NOTES

BUSINESS

NOTICE OF RE-CONVENING OF SPECIAL GENERAL MEETING

NOTICE IS HEREBY GIVEN that the Special General Meeting of the Wireless Institute of Australia, NSW Division, held on 28 October, 1977, and adjourned on that date, will be re-convened at 14 Atchison Street, Crows Neat, on FRIDAY, 28 JULY, 1978, at 2000 hours.

 Further consideration of the proposed revision of the Articles of Association of the Wireless Institute of Australia, NSW Division.

The following officers were appointed at the rat Council meeting for the current year. Card VK2ZBX - Vice-President. Repe DNII Officer, and also Lisison for:—City, RTTY Group, VHF and TV Group, Newcastle, Far North Coast and Central South Coast.

Gareth Davey VK2ANF - Broadcast Organiser and Editor, Council Minute Secretary and Lieison Officer for Central West Zone Henry Lundell VK22HE - Property Officer for Dural

and Crows Nest, siso Engineer for Dural and Crows Nest. Tim Mills VK22TM - Secretary, Tressurer, Sale of

Publications, Federal Councillor and Duplication Officer Mark Salmon VK2DI — Publicity for and Application om New Members, Lisison Officer

Bureau, WICEN and South West Zone. David Thompson VK2BOT - President, Council Chairman and Assistant Treasurer. Keith Woodward VK2AT - Vice-President, Monthly

Meeting Chairman, Mini-Bulletin Editor and Producer, Educational Officer, Liatson Officer with Amsteur Radio and the Shire of Great After the Special General Meeting ann

shove it is hoped that we will be able to continue programme of Interesting leatures functions for the remainder of the year. The August General Meeting will feature the lecture "Sugar Coaled Occar 6", ably presented by Gil Spencer VK2JK. The occant will be pleasure not business. and your presence will make the night more enjoyable. Bring an interested friend, as visitors are most welcome 73 de VKSAT

### AK3

#### THE MEN IN THE ROOMS

four emateurs pictured have helped the Vic-torian Division WIA by voluntarily manning the Division's office at 412 Brunswick Street, Fitzroy, on Tuesday, Wednesday and Thursday.



ameteur radio, oldest licence 1935, newest 1974. In addition, Roy is outwards QSL Manager and Mike Is Olvisional Librarian.

A tredition has been established called "lunch with the boys" — all welcome — join them about midday for a counter lunch at the Moonee Valley Hotel, just one block south of the rooms.

The Divisional Council has expressed thanks to the "men in the rooms" and would welcome any others that would like to help.

## IARU NEWS

The Executive, in May, voted in favour of the admission of the Grenada ARC and the Association des Radio Amateurs du Sanegal.

In the Special Report on the 1978 Federal Con vention in this issue mention was made of seeking international agreement for RTTY frequencies on International agreement for RTTY frequencies on HF. These seen likely to be the segments dis-cussed at the IARU RT Conference in Hungary during April. The RSGB had recommended the following—3809-3900 LHz, 7035-7055 LHz, 14075-14100 LHz, 21080-21100 LHz and 28080-28100 LHz. This matter is etill. This matter is still to be discussed by the Federal

### 20 YEARS AGO Ron Fisher, VK3OM

JULY 1958

question was posed by the Editorial of the July 1958 Amateur Radio. With an ITU conference around the corner at that time. It proves that there is nothing new under the sun. Maybe things there is nothing new under the sun. Maybe things have changed to some actual but the last section of the Editorial is worth repeating. "The worth of the Ameteur to any country can't be weighted by how snary times he operates in a week or whether he is solvely on the six at all. It's list knowledge that is valuable and it is time that the the country can be set or the six of the country can be set or the section of the six at all. It's list to the section of the six at all. It's list to the section of the six of the section of the amateur himself woke up and told a few people that fact. 'Use them or lose them' . . . as we often hear mouthed should be a minor worry. It's the support of our communications people was expect right now." In light of present day developments, what do you think? A new Receiver Tuning Principle. In other words

inter the Wadley system of receiver tuning. The enter the Wadley system of rockiver tuning. The first receiver to make use of this was the liences Bacal RA-17, Many will remember the Deltahet and of course today we have the FRG-7, SSR-1 and the Barlow XCR-30, ell of which use this same system. The enticls was reprinted from March 1958 QST. Part five of Amateur Television by Eric Comellus

described the video mixer and switching set-up. Read-ing and Writ-ing for Em-erg-en-cy Net Op-er-at-ors. Horman Burton BERS11494 look a lighthearted look at the new NATO phonetic alphabet. Noted too was that the authors' views were not necessarily those of the publishers. Two antenna articles completed the Issue, 21

Mc. Quad for 300 Ohm Feed by J. W. Edge VK2AJO and Adjustment of Gamma-Matched Paraellic Beams reprinted from March 1958 QST.

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## SILENT KEYS

It is with deep rearel that we record the passing of -

Mr. R. MAXEIELD 170120

MATT BRANE MYTOI Matt passed away suddenly on May 8th, 1978. His death came as a shock to every-one who knew him. Matt was mainly active

on 2 metres and 80 metres, and was also well known as a result of late-night crosshand contacts to 160 metres. After studying as a law undergraduate at Melbourne Uniwersity, Matt was quite active giving CW practice on some of the more off-beat 2 metre FM channels and on 30 metres as well. Recently he also obtained his Re-stricted Radio Telephony Operators Certi-licate for seaborns use, and had lately been spending time during the weekends oring merine frequencies as part the Technical Division of the Australian Volunteer Consiguerd, His main station was located at North Geelong, and during the week operated portable at Brunswick.

Matt was only 34. His funeral was very well attended, and included many of his amsteur friends. The WIA would like to extend its deepest sympathy to his wife Anna, his family, and many friends.

Ses Gabb VKSGP and his wife, Winnefred, died in a tregic car accident whilet re-turning to Naime from Adelaide. Sas was licensed in 1990 and was postmaster at

Naims. He was a friendly person with a reedy sense of humour. The loss of See will be felt by many members of the amateur community. Ree

and Winnefred will also be missed by their five children of whom they often spoke with pride and affection. We express our sympathy to their family and friends.

(From Alan Bolton VK5TT)

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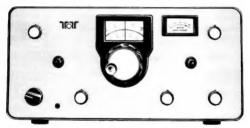
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